UNIVERSITY OF PENNSYLVANIA

AN ANALYSIS OF EDUCATION OBJECTIVES AND OUTCOMES IN THE FIELD OF HEALTH EDUCATION

WILLIAM E. BURKARD

A THESIS

IN EDUCATION

PRESENTED TO THE FACULTY OF THE GRADUATE SCHOOL IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY

PHILADELPHIA

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To My Mother

Who Made All Things Possible

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An Educational Analysis

1.

Introduction

The Importance of Health Education

We cannot discuss the importance of health education without bringing into the discussion the value of health itself to the individual. The problem of health education is that of changing the individual from what he is to what he ought to be[1] along five important lines.[2]

(a) Physiological Health
(b) Mental Health
(c) Emotional Health
(d) Moral Health
(e) Social Health

The sum total is the picture of a healthy and happy personality.

The failure in some localities of enforcement laws relative to the Prohibition Amendment has served to re-emphasize the importance of education. Continual stress is being placed upon the need of education, of enlightenment, if legislation is to be made effective and enforceable.[3] Far from removing the need for temperance education, legislation has served merely to emphasize the need for a continuance of such instruction. Out of this grows a generalization. There are numerous illustrations of the fact that legislation fails when the mass or a mass of the citizenry are not ready for the step—educated up to it.[4]

We must look to the school as one of the agencies for the development of a positive Attitude toward health—the development of a health conscience on the part of the community.

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[1] Essentially the point of view of Thorndike.
[2] See Report of Joint Committee, p. 24, for discussion and definition of each.
[3] See Twenty-Sixth Year Book—Part II, p. 15. "The School as a Conscious Agency for Social Improvement."
[4] One of the causes frequently cited as a reason for the failure of enforcement of the Education Act in England (Fisher Bill) 1917, is the fact that the people were not ready for the reforms involved.

Wellings, in his "Experiment with a Project Curriculum", has shown that in specific instances, the use of certain methods has resulted in increased attention in the community, to aspects of home and community life that are considered factors of the health problem.

The importance of health can be further indicated by a study of statistics compiled from various sources, viz:

(a) the census
(b) records of life insurance companies
(c) state and city boards of health

These reports concern themselves with aspects of health of deep concern to people in many walks of life. For the figures and details of the more significant of these reports, an examination of Chapter I—"Health Conditions in the United States" —of the Report of the Joint Committee is highly recommended.[5] The chapter named is both brief and comprehensive, and it is felt that it would be useless to work out again here what has already been done there. We can briefly indicate, however, some of the things that effective Health Education can be expected to do. They are:

1. Raise the expectancy level of life.
2. Eliminate much preventable illness (due to ignorance, carelessness, etc.).
3. Effectively assist in the correction of the physical defects of school children, workers in industrial establishments, and others.
4. Secure effective public co-operation in the carrying out of measures intended to prevent the spread of communicable diseases.
5. Reduce the number of accidents due to preventable causes.

It has been estimated that the economic loss to the people of the United States due to communicable diseases—the most of which are preventable—runs from $1,000,000,000[6] to $2,000,000,000[7] yearly. In addition to the economic loss there

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[5] See also Payne, E. George, Education in Health, Chap. I.
[6] Report of Joint Committee, p. 14.
[7] Proceedings, Institute of Politics, Williamstown, Mass., 1926. (L. I. Dublin).

is also to be considered the mental anguish, privation, loss of educational and other opportunities, and inconvenience to others that is caused by illness.

The importance of health education is further emphasized by the prominence given to "Health" by the Committee on the Reorganization of Secondary Education. This Committee organized the now nationally known "Seven Objectives" of Secondary Education. Health was placed first on this list of seven objectives. This thesis, then, is a contribution of certain desirable outcomes in organized form, relating to this first objective of education—health.

The Scope of this Thesis

By "Educational Analysis" is meant an analysis of the objectives and of the desirable outcomes of (health) education, and an organization of the outcomes into a form designed for the achieving of the objectives.

In this investigation, the first step was the formulation of objectives. A tentative formulation of the objectives was arrived at by a process of logical analysis[8] from the standpoint of control. The various types of control selected as objective were arrived at after an examination of certain materials:

a. Pupils' texts.

These 34 pupils' texts included the health (hygiene) books of 14 publishing firms (see bibliography).

For basis of selection see pp. 69.

b. Courses of study in health education, hygiene, etc.

These 15[9] courses of study were the result of a solicitation for copies of all places recommended by:

(a) The Report of the Joint Committee
(b) The American Child Health Association
(c) The United States Bureau of Education.

c. Miscellaneous references consisting of:

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[8] A. Duncan Yocum—"Analysis of Education as Conduct Control," p. 5; also Bode, B. H.—"Why Educational Objectives?" *Journal of Educational Research*, 10; Oct., 1924, 175–186.

[9] Three of these courses of study were included on the basis of their belated appearance together with certain considerations of merit. They were Horace Mann (1 to 6), Phila. (1 to 6), and Phila. (7 to 9).

(a) Literature from 16 organizations and sources concerned with the public health.

(b) Seven reference books recommended as "authoritative" on matters of health, by the Division of Health and Physical Education of the Philadelphia Public Schools.

d. Certain studies of the Objectives of Health Education (See pp. 14–17).

An examination of the major divisions, chapter headings, and tables of contents of these materials was a basis for a selection of the major aspects into which control should be divided. Certain criteria for objectives suggested by Bobbitt (p. 32) in his "How to Make a Curriculum" were kept in mind. These criteria were:

1. Easy and intelligible language
2. Not too general to be useful
3. Vague and visionary aspirations to be counted out.

While Bobbitt's conception of an objective is listed in the form of an "ability," nevertheless, his criteria were found to be helpful in the matter of securing clarity.

The second step was the determination of certain Controlling Outcomes by which these objectives might reasonably be attained. The selection of these Controlling Outcomes was also based on an examination of the materials indicated previously, with particular reference to the contribution of a desirable Controlling Outcome to any particular objective, and on the basis also of the "obvious recurrence and range" of the various Controlling Outcomes.

As a check on the possible omission of any desirable Objective or Controlling Outcome, reaction in the form of a questionnaire was sought from a carefully selected group of 253 persons who might be regarded as authorities on such a formulation. This preliminary listing of Objectives and Controlling Outcomes was subsequently revised in the light of criticisms contained in replies to the questionnaire.

After this last (tentative) formulation of Objectives and Controlling Outcomes, the next step was to build up about each Controlling Outcome a system of Contributory Outcomes which

reasonably might be expected to insure the control by the desired outcome. The assembling of these contributory outcomes was based on their "obvious recurrence and range" as suggested by an examination of the materials previously indicated with the addition of two courses of study in the teaching of civics, and 4 additional reference books on the teaching of civics. These additional references were added because of the incorporation of the additional objective (H. Control of the Emotions and the Ideals). This explains roughly the procedure covered by the term "educational analysis."

The scope of the term "objectives" has already been partially indicated. More completely we can describe objectives as "the logically organized ends (of education), objective to the individual learner." (For this and succeeding technical terminology, See A. Duncan Yocum—"Analysis of Education as Conduct Control"—or Appendix A of this thesis.)

The term outcome may be defined as "the result of a situation or of an experience, stated as a *form of control* or as a *control element.*"

Health is regarded as many-sided, including physiological, mental, emotional, moral and social well-being. Education is "the retention of any experience, conscious, or unconscious, which permanently enough and strongly enough suggests some form of control."[10] Health Education, therefore, "for the purposes of this inquiry is understood to include all school agencies, subjects, and methods of instruction that influence directly or indirectly the health of the pupil."[11] It must necessarily include individual and group, informal and formal instruction. Out of seventy-eight replies to the questionnaire—which was sent to a carefully selected group—there was only one objection to this definition of Health Education. This position is further supported by the fact that "health" is taught through many different branches of the course of study, particularly in high schools.[12] In some elementary schools, health is taught only incidentally, or as needed, from situations that arise. It

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[10] *Ibid.*
[11] Quoted from Questionnaire of this study (see pp. 30-31).
[12] Report of the Joint Committee supports this point of view.

should be obvious, therefore, that "Health Education" has a much wider scope than mere formal instruction in hygiene.

This analysis is not a course of study. It is merely a provisional assembling of the desirable outcomes and objectives of health education organized for conduct control, based on an examination of materials previously indicated. The effectiveness and the inclusiveness of this organization is subject to confirmation by future experimentation and investigation. The "location" of any outcome in a particular course of study, or in any grade or year, is also a matter for future investigation. This assembling of outcomes, however, probably offers a wealth of reference material for course of study making,[13] and for effective health instruction.

The "Objectives of Health Education" as formulated here have received almost unanimous endorsement from a large number of authorities on the curriculum, on courses of study, and of experts in the field of health education, all of whom were carefully selected. "Finality" is not claimed for such a formulation: It has however, received marked professional approval, and therefore it may well be considered a good formulation of the objectives of health education.

C. *Previous Statements and Studies*

A careful examination of the Third Year Book (Dept. of Supt., N. E. A.) reveals studies of objectives in other fields but none in the field of Health and Physical Education. A perusal of Charter's Curriculum Construction[14] results in the discovery of no studies in this field listed there. There is, however, at least one study of importance that has been previously made.

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[13] See Bobbitt, "How to Make a Curriculum," on the major task of educational engineering, particularly p. 3: "In dealing with difficult professional problems, so long as there is no solution capable of scientific verification our profession is in the mood to leave the matter in the form of a question—The practitioner, however, cannot act on the basis of questions. He can act only as there is a solution. A tentative solution on the basis of the best evidence available is better for him than a question. He ought, of course, to realize that it is tentative and problematical; but so long as it represents the best solution at which he is able to arrive, it is the safest thing for his purposes."

[14] Charters, W W., Curriculum Construction, The MacMillan Company, 1923.

Bobbitt in his list[15] of specific objectives worked out in his graduate classes and in connection with his work in Los Angeles assigns thirty-nine objectives (numbers 101 to 139, inclusive) to the field of "Physical Development and Maintenance," together with an additional list of nine objectives (with many sub-headings) under "General Mental Efficiency." These objectives are generally listed as "abilities" of various kinds. Two criticisms maybe leveled at this list of thirty-nine objectives. It is too long for a list of general objectives, and it is probably not long enough—detailed enough—for a listing of specific objectives in health education. Bobbitt's "objectives" have been criticised by Bode as "subjective and confusing."[16] Snedden, however, "considers Bobbitt's work 'a most helpful contribution, an interesting and suggestive qualitative analysis,' but not sufficiently quantitative. He points out the vagueness of many of Bobbitt's objectives and the failure to distinguish between case groups of distinctive population elements in their application."[17]

Snedden, in his "Sociological Determination of Objectives in Education" treats hygiene and physical training separately. Under "*alpha*" (activities) he would list:[18]

(a) For hygiene:—practical applications of health knowledge —e. g., brushing the teeth, correct posture, etc.

(b) For Physical Training:—correction of existing defects, or prevention of apprehended defects.

Under *beta* (interests) he would list:

(a) For Hygiene: insight, appreciation of health, etc.

(b) For Physical Training: Games, scout activities, developmental play, athletics, etc.

Snedden also has in mimeographed form "Some Hypothetical Findings of Valid Working Objectives (for Physical Education)." He states the purposes of physical education as follows:

"To use all available educational means and methods:

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[15] Bobbitt, Franklin. How to Make a Curriculum. Houghton-Mifflin Company, Boston, 1924.

[16] Twenty-Sixth Year Book, N. S. S. E., part I, p. 460.

[17] Twenty-Sixth Year Book, part II, p. 464.

[18] See Snedden, David—"Sociological Determination of Objectives in Education," p. 53.

(a) To promote the normal growth to optimum size, strength, grace and functioning of the body of plastic humans.

(b) To assure prolonged conservation of bodily health, strength, and endurance.

(c) To correct bodily malformations, or inadequate functionings as these appear in individual or group cases.

(d) To conduct various forms of specific physical training in individual or group cases where the probable needs for specialized, non-technical types of extraordinary size, strength, co-ordination or endurance are strongly established."

The *Chicago Schools Journal* for October, 1925, is devoted to the problems of the teaching of health. There is on page 163, an interesting "health program." It includes:

1. Knowledge of the human body.
2. Physical examination of each child.
3. Follow-up on defects.
4. Knowledge of sanitation principles.
5. Ability to operate heating plant and plumbing fixtures.
6. Civic aspects of health.
7. Specific immunity to certain diseases.
8. Knowledge of nutrition, rest, and energy.
9. Mental hygiene.
10. Some sex hygiene.

While the items of this program cannot be considered as objectives, yet they are strongly suggestive of certain phases of health which objectives must include.

In the same issue of this magazine is a list of "Objectives of Health Education," by Bobbitt. They are formulated on the plan of his "Principles of Education in Secondary Schools," and are somewhat too detailed to reproduce at length here. He points out several significant factors, however—that health education should be for:

1. Better health—at *all* stages of life.
2. Better health—intellectually, physically, emotionally, and socially.

3. Long continued and wholesome living, rather than a mind stored with knowledge.[19]
4. Healthful living.[19]

The Pennsylvania State Course of Study in School Health, states the following "goals" of health instruction:[20]

1. *Habits* and *Standards*.
2. *Knowledge*, facts regarding cleanliness, etc.
3. Better living through *ideals* of health, beauty, and service.
4. A *Sense* of individual responsibility and *Standards* of health for the community.

The Detroit Course of Study in Health Instruction formulates the "aims" of Health Education as follows:

1. The Control of Physical Ability
2. The Control of Growth
3. The Control of Illness
4. The Control of Accidents
5. The Control of Defects
6. The Control of Energy and Vitality.

It will be noted that there is some similarity between this formulation of the "aims" of education and the "objectives" of health education as formulated in Chapter II. The idea of formulating the "Objectives" from the standpoint of control was originally suggested by this statement from Detroit. After an examination of the pupils' texts, courses of study, and reference materials stated previously, however, decided changes were made in the nature of the "controls" themselves.

Of recent years, a number of studies have been made in the Graduate School of the University of Pennsylvania (field of education, division of "Outcomes, Materials and Methods of Instruction"), in attempting to analyze the outcomes of instruction. A brief survey of the more recent of these studies follows:

1. "Latent Religious Resources in Public School Education"—C. A. Hauser (1924). An analysis of the materials of the various

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[19] These can be used in support of a formulation of objectives in terms of conduct control.

[20] This terminology is particularly significant in view of the later analysis in terms of conduct control.

public school courses of study, bearing on their possible contribution in the form of outcomes to the control of the religious life of the individual. Particular attention is paid to educational aims and objectives, espeically the five forms of control. (See Appendix A.)

2. "An Analysis of the Obvious Outcomes in a Study of the Life of Christ Essential for Character Education in the Denominational Colleges"—Walter A. Groves (1925). An Analysis based on the "obvious recurrence and range"[21] of the outcomes. Outcomes are arranged in the form of complexes,[22] although no attempt is made to differentiate out the various "elements"[22] of the complex. A demonstration of the application of educational analysis to the field of religious education.

3. "Objectives and Materials of the Comprehensive Program for Young People of the Presbyterian Church, U. S. A."—Ralph Cooper Hutchinson (1925). An analysis of the selection of the desirable materials for the program indicated above. Objectives were determined by an analysis of the characteristics and needs of the group mentioned. Analysis of contributory outcomes was based on obvious recurrence and range. No differentiation made regarding the various elements of the complex.

4. "Non-athletic Student Activities in the Secondary School" —O. A. W. Rohrbach (1925). An analysis of outcomes based on visits to, and conferences in 73 Senior high schools, 27 Junior high schools, and 34 private schools; studies in leadership opportunities and other activities based fundamentally on the use of a student questionnaire. This analysis of outcomes is a listing in the order of frequency. No attempt has been made to organize the outcomes into complexes, nor to formulate Objectives or Controlling Outcomes.

5. "The Educational Value of Chemistry, or the Contributions of Chemistry to Conduct Control for Boys and Girls of the High School Group"—Frances W. Lyons (1925). A formulation of objectives, with professional endorsement from 90 teachers of chemistry (questionnaire method). An analysis

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[21] See Appendix A, p. 260 and 261.
[22] See pages 66 and 67.

of outcomes based on a study of 55 chemistry texts, 10 courses of study, and articles from current periodicals. Outcomes are arranged in the form of complexes, but no attempt has been made to differentiate out the various types of elements.

6. "Educational Outcomes Unique in the Teaching of History" —Henry G. Maeder (1926). The outcomes are based on a study of text-books, courses of study, syllabi, general histories, and works on secondary education. Outcomes are arranged in the form of educational complexes.

7. Concurrently with this study (and therefore, as yet, unpublished), an investigation and analysis of the outcomes in the teaching of geography is being made by Mr. Charles E. Neville of the Graduate School of the University of Pennsylvania.

The present study attempts not only to apply the procedure of educational analysis to the field of Health Education, but goes a step beyond the other studies and attempts to distinguish between the various desirable types of "elements" of the complex (strengthening, counter-acting, completing, etc.). This classification is wholly tentative, however, subject to confirmation by the results of future experimentation or investigation.

2.

The Questionnaire—Preliminary Procedure and General Character of Response

Tentative Organization of Objectives and Outcomes

The objectives of Health Education were arranged tentatively on a logical basis. As previously indicated, no major study has ever been made of the "objectives" of Health Education. Certain "aims" of Health Education are stated in the Report of the Joint Committee (of the N. E. A. and the American Medical Association) but the method used in arriving at this selection of aims is not stated, and probably in a broad sense could not be regarded as following research procedure. No statement of objectives in this field appears in the Third or Fourth Year Books of the Department of Superintendence.

The first principle used in the definition of the "objectives" for the purpose of this thesis was that all objectives should aim at some form of control affecting the health of the individual, permitting the elimination of methods and materials of little probable significance for control of conduct or "behavior." Such a principle is directly aimed at the subordination of the purely logical treatment of certain details in physiology and anatomy that were once taught but which are now generally regarded from the point of view of time and teaching energy—as not worthwhile. It is in line with a distinct modern trend through emphasis on "doing" rather than mere "knowing" as an end of education. Such a principle would involve only those methods and materials (content) that have a direct function in the control of behavior.

The second principle centralizes about the thought that health is many sided, and that these separate aspects of control merited distinct and separate statements, thus "The Control of Personal Cleanliness," "The Control of Environmental Cleanliness," "The Control of Normal Growth and Energy," etc. The tentative classification of these various divisions or groups of control was arrived at by analysis of text books, reference books

on health and certain recommended courses of study, as noted on pages 11 and 12.

The third principle recognized in the formulation of these objectives is that they are not mutually exclusive. While they were intended to represent distinct phases of the aims of Health Education there is a certain correlation that exists among them all. "Environmental Cleanliness" does affect our "Control of Disease" and "Personal Cleanliness" has a direct bearing at times on the "Control of Normal Growth and Energy."

Thus with these principles in mind, the tentative classification of the objectives of Health Education was set up as follows:

A. The Control of Personal Cleanliness.

B. The Control of Environmental Cleanliness.

C. The Control of the Normal Functioning of Certain Parts of the Body.

D. The Control of Normal Growth and Energy.

E. The Control of Disease.

F. The Control of Accidents.

G. The Control of Emergencies in Health.

(Note: "Control" is meant to imply—where desirable —preventive as well as maintaining and remedial aspects.)

In order that the limits of the various objectives might be more distinct, the probable controlling outcomes contributing to each objective were placed under the respective objectives. This tentative arrangement of outcomes was based on their obvious range and recurrence as suggested by an examination of representative pupil texts, reference books on health, and the aforenamed courses of study. This brought the tentative arrangement of Objectives and desirable controlling outcomes to the following classification:

A. THE CONTROL OF PERSONAL CLEANLINESS. All Controlling Outcomes relating to the cleanliness and the care of:

Hands
Feet
Face, Neck, Ears,
Skin (Bathing)
Nails (Finger, Toe)
Hair
Mouth
Teeth
Nose
Throat
Clothing

B. THE CONTROL OF ENVIRONMENTAL CLEANLINESS. All Controlling Outcomes relating to:

Clean and Healthful Schools
Clean and Healthful Homes
Clean and Healthful Communities.

C. THE CONTROL OF THE NORMAL FUNCTIONING OF CERTAIN PARTS OF THE BODY. All Controlling Outcomes relating to the Care of:

Organs of the Special Senses,
Circulatory System,
Digestive System,
Respiratory System,
Excretory Systems.

D. THE CONTROL OF NORMAL GROWTH AND ENERGY. All Controlling Outcomes relating to:

Fresh Air,
Sunshine,
Drinking Water,
Food,
Elimination of Body Waste,
Work, Exercise, Play,
Proper Posture,
Sleep and Rest,
Mental Habits,
Clothing (selection),
Alcohol
Tobacco.

E. THE CONTROL OF DISEASE. This includes all Controlling Outcomes relating to:

Prevention,
Proper Medical Attention.

F. THE CONTROL OF ACCIDENTS. All Controlling Outcomes relating to the prevention of accidents:

At Home,
At School.
On the Street,
In the Country,
At the Seashore,
At Play,
To the Baby.

G. THE CONTROL OF EMERGENCIES IN HEALTH. All Controlling Outcomes relating to "First Aid" treatment of:

Nose Bleed,
Cuts,
Bruises,
Sprains,
Broken Bones,
Burns,
Fainting,
Poisons (swallowed),
Electric Shock,
Sun Stroke,
Heat Exhaustion,
Drowning,
Asphyxiation (gases).

Sampling and Distribution

To whom should one turn for approval or disapproval of such a classification? What groups should be sampled for a reaction?

1. It seemed desirable to question all of the members of the Joint Committee and the Technical Committee of Twenty-Seven of the N. E. A. and the American Medical Association,

omitting a few small groups of specialists. (Educational Psychologists, Dentists, Nutrition Experts.)

2. Authors of texts—authors of reference works for teachers, and authors of pupils texts of considerable range in school grade and varied in character.

3. Directors of Health Education—cities and states.

4. Directors of Research Bureaus—cities and universities.

5. Educators—recognized authorities on the curriculum. (Included in this group are members of the various committees of the Department of Superintendence and of the National Society, and certain other men of recognized standing.)

6. Teachers—of special qualification or merit, recommended by state or city superintendents or rural school supervisors. This group included teachers of elementary grades, city and rural; supervisors of health education in elementary schools; teachers of health education in junior high schools; and teachers in laboratory or experimental schools and schools of progressive education who were particularly interested in health education.

7. A small mixed group composed of secretaries of certain health organization and of editors of certain health magazines.

Exact Distribution of the Questionnaire:

I. Members of the Joint Committee (etc.):

1 Chairman
17 Members of the N. E. A. Committee (one deceased)
5 Members of the Committee of American Medical Asso.
8 Members of the Sub-committee of Educators (one deceased)
3 Members of the Sub-committee of Physicians
3 Members of the Sub-committee of Physical Educators
3 Members of the Sub-committee of Biological and Public Health Experts.

—

40 Total

It will be noted that the members of the sub-committees of Educational Psychologists, Dentists, and Nutrition Experts were not included with the others. The cause of the differentiation lay in the theoretical objection that these three groups were

concerned with rather restricted fields, rather than with the whole field of Health Education.

II. Authors:

These names were selected from a listing of the authors of the recommended texts in the Bibliography of the Report of the Joint Committee. Only those texts and reference works bearing on the general field of health were considered suitable for the purposes of this investigation.

5 Authors—reference works for teachers (Health Ed.)
20 Authors—pupils' texts—(elementary, junior high and senior high)
5 Authors—of health texts for supplementary reading in the lower grades
5 Authors—of health texts for supplementary reading in the upper grades

—

35 Total

The total number of authors approaches closely the number (40) selected from Group I—members of the Joint Committee. Some disparity exists in the number of authors selected from the texts of the respective classes. This was due to a lack of sufficient, well recommended books in certain of the classes, and the desire to bring the total of the number of authors up to a point near the forty mark. It should be noted, too, that the "20" includes the authors of three types of texts, so that the disparity is not really so great as it would at first seem. Of the three types of pupils' texts, however, the elementary was the most numerous.

III. Directors of Health Education.

26 Directors—cities
26 Directors—states

—

52 Total

The total number in this group was purposely made to exceed the total number in the other groups because in addressing the questionnaire to these directors, they were addressed officially and not personally, and also to the fact that—while the most

likely states and cities were selected—in many cases it was not known whether such an official position existed. The number was therefore increased in order to discount in advance a probable low rate or percentage of reply in this group. It should be noted that an effort was made to "scatter" evenly the twenty-six cities and the twenty-six states in various parts of the country, making some allowance for density of population and for reputed progress in education. In other words, an increased number of questionnaires were distributed where it was felt greater opportunity existed for reliable response.

In order to make some study of relative geographical distribution of the questionnaires and replies thereto, the country was divided (using the divisions of the country suggested in the McMurry, Parkins Geography) into the following sections:

1. Northeastern Section: All states east of the state of Ohio and north of the Virginias.

2. Southern Section: Includes Texas, Oklahoma, Kentucky, West Virginia, Virginia, all states south of these, and Washington, D. C.

3. North Central Section: Includes North Dakota, South Dakota, Nebraska, Kansas and all states east of these to the boundaries of the Northeastern and Southern States.

4. Western Section: Includes all states west of the North Central and Southern sections, and Hawaii.

DISTRIBUTION OF DIRECTORS OF HEALTH EDUCATION

(To whom questionnaire was sent):

DIRECTORS CITIES	SECTION OF COUNTRY	DIRECTORS STATES	TOTAL
6	Northeast	6	12
8	Southern	7	15
6	North Central	6	12
6	Western	7	13
—		—	—
26	Totals	26	52

IV. Directors of Research Bureaus. The questionnaire was sent to Directors of Research Bureaus, as located in the Research Bulletin No. 42, 1923, of the U. S. Bureau of Education, as follows:

26 Directors of Educational Research Bureaus—cities
9 Directors of Educational Research Bureaus—universities, etc.

—

35 Total

This total approximates the totals of the other groups. The questionnaires in this group were distributed geographically, as follows:

SECTION OF COUNTRY	DIRECTORS OF RESEARCH		TOTAL
	CITIES	UNIVERSITIES	
Northeast	6	2	8
Southern	5	0	5
North Central	8	6	14
Western	7	1	8
Totals	26	9	35

While the geographical distribution in this group was somewhat uneven, it must be remembered that bureaus of educational research are none too plentiful and for the most part they had to be taken where they could be found.

Group V. Educators who might safely be regarded as authorities on the curriculum.

	NUMBER
General Committee—4th Year Book, Dept. of Superintendence	10
Sub-Committee (on Health Education) 4th Year Book, Dept. of Superintendence	8
General Committee—National Society (1927 Year Book)	9
"Unattached" (approved) authorities	9
Total	36

Group VI. Teachers. Questionnaires were sent to public school teachers on the basis of letters of recommendation received from superintendents of cities, superintendents of instruction of states, and in some cases, rural schools supervisors. They were distributed as follows:

CITY OR STATE	ELEM. GRADE TEACHERS	SUPERVISORS HEALTH ED. (ELEM.)	TEACHERS HEALTH ED. (SECONDARY)	TOTAL
city Philadelphia	2	1	1	4
city Springfield, Mass.	2	1	1	4
state Alabama	0	2	1	3
state New Mexico	1	1	1	3
city Grand Rapids	1	1	1	3
state Connecticut	1	1	0	2
state California	0	2	2	4
city Toledo, Ohio	2	0	1	3
city Washington, D.C.	0	1	1	2
	9	10	9	28

Distribution by Sections of Country:

Northeastern	10
Southern	5
North Central	6
Western	7
Total	28

In addition to this, letters were sent to the principals of six so-called experimental or laboratory schools and six so-called schools of progressive education, asking them to refer the questionnaire to one of their teachers who might be particularly well qualified to answer it. The total composition of the group as "questionnaired" then resolves itself as follows:

Grade teachers—elementary (city and rural)	9
Supervisors of Health Education—elementary	10
Teachers of Health Education—secondary	9

Teachers—Experimental schools 6
Teachers—Schools of Progressive Education 6

Total 40

In answer, perhaps, to some question it should be stated that while it was felt that some reaction from the teaching group was desirable in a questionnaire of this type, yet it was believed that only a small and a select group of teachers should be asked for a response. The number consulted was purposely kept small in order to prevent an undue weight from this group in the final tabulation of results. The *average* teacher may be too close to her work to see the ultimate end for which she should be working—very often she has an inadequate background for answering a questionnaire such as this.

Group VII. Secretaries of Health Organizations 10
Editors of Health Magazines 5

Total 15

From the Health Organizations listed on pages 160–161 of the Report of the Joint Committee, ten organizations were selected on (1) the basis of the size and reputation of the organization, (2) the general nature of its health work, and (3) the closeness of its relations with the work of the schools. Questionnaires were sent to the secretaries (research directors in some cases) of these organizations.

Similarly from the list of Magazines on Page 161 (Report of the Joint Committee), five were selected on the basis of (1) their relation to the child and his needs, (2) the *general* character of the magazine in relation to National Health, and (3) the responsibility and reputation of the organization in back of the magazine. Questionnaires were sent to the editors of the five magazines that satisfactorily met the requirements named above.

The size of the total for Group VII is out of proportion to the totals of the other groups, but it is felt that some representation from this mixed group was better than none at all. It was particularly difficult to get organizations and magazines whose

health work was of such a general character that they could be expected to give an intelligent response to a questionnaire involving the whole field of Health Education. A reaction from these two groups, however small, was desirable because they would presumably represent to some extent the aspect of "social demand and need" in the formulation of the objectives of Health Education. These editors and secretaries represent to some extent an intelligent lay point of view toward the work of the schools in Health Education.

The Questionnaire

The questionnaire as it was sent out appears herewith:

Your indulgence is asked for the enclosed questionnaire. It will make no great demand on your time and energy. Answers will not require the consultation of records nor the keeping of them. Your opinion only is solicited.

This questionnaire is one outgrowth of a dissertation (doctorate) entitled, "An Educational Analysis of the Objectives and Outcomes of Health Education." It is being submitted to a limited number of authorities in the field of Health Education and in the field of the Curriculum. Any suggestion, comment, or alteration that you make will receive careful consideration. Your kindness will be greatly appreciated.

WILLIAM E. BURKARD, *Principal*,
Childs Public School,
Phila, Pa.

5–10–26 Graduate School
Univ. of Penna.

Explanation: (Comments on these are acceptable, but not neccessary.)

1. It is realized that some over-lapping exists in the scope of the various objectives. This is believed to be unavoidable. It may be desirable.

2. In order to make clear the general scope of each objective, the Controlling Outcomes that are presumably contributory to it have been indicated.

3. "Health Education" for the purposes of this inquiry is understood to include all school agencies, subjects, and methods of instruction that influence directly or indirectly the health of the pupil.

4. "Facts and principles" are not regarded as ends in themselves. Such realizations are regarded as contributory to the various Outcomes and Objectives.

5. The location of Objectives or Outcomes in the proper grades, elementary or secondary, is not regarded as being within the scope of the present phase of this inquiry.

6. This initial and tentative arrangement of Objectives and Outcomes is based on their obvious range and recurrence in life activities.

7. A "Controlling Outcome" may be defined as any element or form of control that is powerful enough to modify behavior (conduct), e.g., the following: "sensings," "realizations" (of facts or principles), "motives," "standards" or "ideals," "habits," etc.

8. A further analysis of the elements necessary to each "Controlling Outcome" is regarded as highly desirable but beyond the limits of this preliminary phase of the thesis: a matter for later research.

Directions: (1) Examine Part One. It is merely explanatory, included to give a "bird's-eye" view of the major divisions of the field.

(2) "Check" Part Two. CROSS OUT any item with which you disagree, or which you believe to be misplaced. ADD any Objectives or Outcomes that you feel have been omitted. WRITE IN THE MARGIN any comment that you may care to make.

(*Explanatory*)

PART ONE

SUMMARY OF OBJECTIVES

A. THE CONTROL OF PERSONAL CLEANLINESS.
B. THE CONTROL OF ENVIRONMENTAL CLEANLINESS.
C. THE CONTROL OF THE NORMAL FUNCTIONING OF CERTAIN PARTS OF THE BODY.
D. THE CONTROL OF NORMAL GROWTH AND ENERGY.
E. THE CONTROL OF DISEASE.
F. THE CONTROL OF ACCIDENTS.
G. THE CONTROL OF EMERGENCIES IN HEALTH.

(NOTE: "CONTROL" is meant to imply—where desirable—preventive as well as maintaining and remedial aspects.)

PART TWO

OUTLINE OF OBJECTIVES AND OUTCOMES

("Checking," etc., begins at this point.)

A. THE CONTROL OF PERSONAL CLEANLINESS. This includes all Controlling Outcomes relating to the cleanliness and the care of:

Hands	Nose
Feet	Throat
Face, Neck, Ears	Clothing
Skin (Bathing)	.....
Nails (Finger, Toe)	.....
Hair	.....
Mouth	.....
Teeth	.....

B. THE CONTROL OF ENVIRONMENTAL CLEANLINESS. This includes all Controlling Outcomes relating to:
Clean and Healthful Schools
Clean and Healthful Homes
Clean and Healthful Communities
.....
.....

C. THE CONTROL OF THE NORMAL FUNCTIONING OF CERTAIN PARTS OF THE BODY. This includes all Controlling Outcomes relating to the care of:
Organs of the Special Senses .....
Circulatory System .....
Digestive System .....
Respiratory System .....
Excretory Systems .....

D. THE CONTROL OF NORMAL GROWTH AND ENERGY. This includes all Controlling Outcomes relating to:

Fresh Air	Alcohol
Sunshine	Tobacco
Drinking Water	
Food	
Elimination of Body Waste	
Proper Posture	
Sleep and Rest	
Mental Habits	
Clothing (selection)	

E. THE CONTROL OF DISEASE. This includes all Controlling Outcomes relating to:
Prevention
Proper Medical Attention
.....

F. THE CONTROL OF ACCIDENTS. This includes all Controlling Outcomes relating to the prevention of accidents:

At Home	At Play
At School	To the Baby
On the Street	
In the Country	
At the Seashore	

G. THE CONTROL OF EMERGENCIES IN HEALTH. This includes all Controlling Outcomes relating to "First Aid" treatment of:

Nose Bleed	Sun Stroke
Cuts	Heat Exhaustion
Bruises	Drowning
Sprains	Asphyxiation (gases)
Broken Bones	.....
Burns	.....
Fainting	.....
Poisons (swallowed)	.....
Electric Shock	.....

H. (If any) .....
.....
.....
.....

COMMENTS (if any):

THANK YOU.

WILLIAM E. BURKARD,
Childs Public School,
17th and Tasker Sts.,
Philadelphia, Penna.

Notes on the Form of the Questionnaire

Before the final form of the questionnaire was approved it was first submitted to seven persons of educational standing (a District Superintendent, a Director of Research, an Assistant Director of Health Education, a Supervisor of Health Education, an Elementary School Principal (author of a Health text), a Junior High School Principal, and the Principal of a Practice School (member of several committees on Course of Study in Health Education). They were invited to:

1. Make an actual response to the questionnaire itself
2. Criticize its form or construction. The original form required but slight alteration to conform to suggestions made, and with the approval of the dissertation committee it was sent out in the form in which it here appears.

The "Explanatory Notes" as they appear in the questionnaire were deemed necessary in order to avoid certain misunderstandings. As these Explanatory Notes had the effect of qualifying the response of the individual to the questionnaire, it was thought advisable to invite criticism of these qualifying and interpretative notes. Comments on them were merely invited (left optional) in order to avoid confusion with the real body of the questionnaire.

Some objection may be voiced to the form of the questionnaire —that it formulated a classification that many individuals would merely O. K. and return without much thought. It must be admitted that there is something to such an argument but such a formulation and classification was made necessary by the peculiar nature of the questionnaire itself. As for "inertia" on the part of the respondent, it may be pointed out that the questionnaires were not sent broadcast; that they were sent to a select group of authorities, people not only of marked personal attainment but for the most part having also a decided interest in Health Education. "Inertia" or lack of interest might more properly lead to filing the questionnaire in waste basket, or neglecting to do anything with it at all.

No place was provided for signature. Many of the replies were signed regardless of this fact. However, each questionnaire

that went out was given a code number and letter so that it would be possible to know the group from which the reply came when the questionnaire was returned.

Time Allowed for Response

All questionnaires were in the mail by May 15, 1926, and tabulation of replies was not begun until July 15, 1926, at which time an occasional reply was still being received.

General Response to the Questionnaire

(A) As Distributed Geographically—

Northeastern Section	32
Southern Section	13
North Central Section	18
Western Section	15
	78

The total number of replies, 78, represents approximately 30 per cent of the total number sent out. It is probably a good showing in view of the fact that the questionnaires were put in the mails at an inopportune time—late in the scholastic spring term when educators are unusually busy with administrative affairs, or in many cases about to depart on long vacations.

The preponderance of replies from the Northeastern Section is probably due to the fact that in certain groups it was not possible to sample at random, or to control the geographical distribution of the questionnaires, particularly in the cases of members of committees, secretaries of organizations, and editors of magazines. Because of the unusual educational opportunities centering about the institutions of New York City, there was a decided "New York" or "Northeastern" weight in these groups.

TABLE I

ANALYSIS OF REPLIES BY GEOGRAPHICAL GROUPS

	REPLIES RECEIVED	UNUSABLE	UNFAVORABLE	GENERALLY FAVORABLE[1]
Northeastern	32	2	2	28
Southern	13	1	..	12
North-Central	18	..	1	17
Western	15	..	..	15
Totals	78	3	3	72

The Northeastern Section is predominant because of the number of educational organizations and institutions of national character that center about the city of New York. In certain of the functional groups, it was not possible to "distribute" evenly over geographical areas. This explanation, however, justifies to some extent the observation that this predominance of the Northeastern Section in numbers does not indicate undue "local" weight of opinion as many of the replies listed from New York were national in the sense of the scope of the organization, or institution concerned in the reply.

TABLE II

ANALYSIS OF REPLIES BY FUNCTIONAL GROUPS

	SENT	REPLIES RECEIVED	UNUSABLE	UNFAVORABLE	GENERALLY FAVORABLE[2]
I. Joint Committee	40	15			15
II. Authors	35	7			7
III. Directors Health Ed.	52	14	3		12
IV. Research Bureaus	35	12	1		11
V. Educators	36	13		2	11
VI. Teachers	40	11			11
VII. Secretaries and editors	15	6		1	5
Totals	253	78	3	3	72

[1] Either with or without constructive suggestions.
[2] Either with or without constructive suggestions.

Replies Regarded as Unusable

Three replies were classed as of no value to this investigation.

One reported, in substance, "not clear to me what you wish."

One replied "I cannot see just why this questionnaire. We teach—all the points you have listed here, but I do not know what to check for."

The third merely enclosed a report of medical inspection in the city schools as covering all of the "points" in the questionnaire.

Replies Regarded as Generally Unfavorable

Replies coming under this category were those that rejected the proposed classification of Objectives and Controlling Outcomes or some fundamental principle involved therein.

One such reply set forth that "instruction in" should be substituted for "Control of —". This would invalidate the element of *conduct control* that has been proposed as the fundamental basis for this analysis.

Another said "my way of thinking of the curriculum doesn't seem to make me competent to help you in what you meant. . . . Possibly if I were more interested in such objectives I could help you better."

The third believed that the definition of health education was too broad. This alone would invalidate the basis upon which the whole classification has been raised. This contributor also believes in two "major-heads"—(1) the prevention of disease, and (2) the cure of disease; the first being strictly personal hygiene and the second dependence on medical expert service.

Replies Regarded as Generally Favorable

Replies were so classed if the contributor made no fundamental changes or reservations in the explanatory notes, or under "comments" at the end of the questionnaire. Such contributors accepted in the main the form of classification of "Objectives" and "Controlling Outcomes," with perhaps less suggestion for minor changes as invited by the "Directions." A summary and analysis of the suggested changes will be made in due place.

Only four of the seventy-two "favorable" replies made no suggestion or comment. This, it is felt, indicated more than casual treatment by the contributors.

One nationally famous authority on the curriculum, who has done some analytical work on the desirable outcomes of health education, commented:

"All are important.
All are obvious.
All are checked."

Another felt that more definite detail was needed under each of the Controlling Outcomes. "My suggestion is that you select a definite number of *specific* outcomes in these various groups as representatives of a wider range; that you next attempt to find the frequency and recurrence in specified circumstances." There was some hesitation at first over classifying this as a "favorable" reply in view of the serious criticism made, but as the contributor accepted the general classification and made some notes under each, it was regarded as a general endorsement containing a criticism for lack of detail. In reply to this criticism of lack of detail, it should be observed that note (8) under explanation makes provision for such detail, or at least accounts for the lack of it. It should further be noted that the "lack of detail" in the analysis of outcomes is supplied—based on "obvious recurrence and range"—in Part II of this thesis.

Still another authority said "it looks all right to me", but professed regret at lacking a more intimate knowledge of the particular field. This comment gives rise to the observation of a difficulty peculiar to an investigation of this type—to find educators who are intimately acquainted with the problems of health, and to find health experts who understand principles and problems in the field of education. Unless an authority is well versed in both, or even interested in both, an intelligent answer is hard to obtain.

A member of the sub-committee on Health Education of the Department of Superintendence (Committee on Curriculum) noted "Your objectives are very inclusive . . ." . . . "It seems to me to be quite complete for the type of paper that you intend it to be."

Other brief commendatory remarks general in nature but without particular point, were noted throughout the returns.

An author of an approved and well-recommended text writes in part—"A very complete outline. Probably everything would be included in the carrying out of the program."

Another author comments: "A comprehensive and valuable set of groupings. I have no alteration to suggest."

Still another: "I approve of all of the objectives listed above and I think they are comprehensive."

All of the replies of members of the Joint Committee (and Technical Committee of 27) were favorable. Quoting one: "I think the outline excellent—can make almost no additions."

Another: "The objectives of this outline seem to be good."

Another member of the Committee commented: "This seems to express with reasonable completeness the content and objectives of health education and habit formation for disease control and health development among children of elementary schools."

This distinctly favorable reaction from the members of the Joint Committee and Technical Committee of 27, may be regarded as significant because of the intensive study that they have given to the problem of Health Education.

A Director of Health Education of a large city wrote: "I have gone over the above twice carefully but do not feel that I have anything to add which would be of value . . . A thorough piece of work."

Another wrote: "I am interested in your outline and like your analysis of outcomes."

A Director of Educational Research of a city school system commented: "Your outline is so complete that I cannot find anything to add."

A second: "I like your work so well, that I am keeping a copy."

Another: "All O. K."

Still another: "It seems to me that you have covered the field quite carefully. I can think of nothing to add."

A Secretary of a Health Organization commented: "This outline seems to us complete in all respects, and we have no suggestions or additions to offer."

A member of the Sub-committee on Health Education of the Committee on the Curriculum (Fourth Year Book, Department of Superintendence) notes: "The items added are detail perhaps. Your objectives are very inclusive."

Criticisms or suggestions made—and there were many—will be analyzed at a later point. Comment is made here that the foregoing endorsements give a certain approval or endorsement to the general formulation and classification of the objectives and outcomes. They are not used to support this formulation in the sense of scientific validity, but rather to indicate a certain concensus of professional approval existing in the replies.

3.

Analysis of Replies to Questionnaire

Importance of Notes under "Explanation" for the Purposes of This Questionnaire

Under this heading are to be found those principles and definitions upon the basis of which the "Objectives" and "Controlling Outcomes" were formulated. It was felt that a clear understanding of these principles and definitions was necessary to intelligent response to the body of the questionnaire. "Reaction" —agreement or disagreement with the principles and definitions was left optional in order that there might be no confusion of aim evident. It was felt that where disagreement existed it would be indicated because the validity of the response (for the purposes of this investigation) was dependent upon an acceptance of these principles and definitions. In three instances such disagreement was stated, and these responses were listed as "unfavorable" replies.

Favorable Replies.

Analysis of Comment on Explanatory Notes

1. "It is realized that some overlapping exists in the scope of the various objectives. This is believed to be unavoidable. It may be desirable."

Only five comments were made on note (1) as follows:

Overlapping—desirable	1
Overlapping—undesirable, but unavoidable	1
Overlapping—often is desirable	2
Overlapping—unavoidable because objectives are so general and so indefinite	1
	5

2. "In order to make clear the general scope of each objective, the Controlling Outcomes that are presumably contributory to it have been indicated."

(No comments made by contributors)

3. "Health Education" for the purposes of this inquiry is understood to include all school agencies, subjects, and methods of instruction that influence directly or indirectly the health of the pupil.

Only one comment received, viz. insert "activities" after "agencies." This correction merely amplifies and makes more clear the original definition.

Among the generally unfavorable responses was a comment from a nationally known authority on the curriculum: "Your definition of Health Education is surely too broad. Everything done in the schoolroom, like everything done in the home, influences directly or indirectly, the health of the pupil."

The report of the Joint Committee attempts no formal definition of health, but very obviously leans toward a very broad interpretation. On page 74, note 6:

"The curriculum in health instruction should indicate points of contact with other subjects the content of which has health values, and should suggest methods of incorporating such values, in developing health habits and practices. . . . Such subjects as food, clothing, and shelter studies, nature study, biology, chemistry and physics frequently include much subject matter relating to health practices and values."

More specific reference is made on Pp. 98 et seq. (Courses of Study, Grades 1 to 3 and Kindergarten; Grades 4, 5, 6, Senior and Junior High School, etc.) Almost every conceivable situation or activity that has a bearing on a Health Outcome or objective is included in some way—to name some:

"(Use of classroom situations) play periods, rest periods, periods for rhythms, song, stories, verses, school luncheon (gardening, nature work, preparation and cooking of food, occupational work, health talks), construction activities, dramatization, nature study activities, in-door plays and games, arithmetic, geography, (hand)writing, out-door plays and big muscle activities, civics, biology, chemistry, physics, bacteriology, physiology, psychology, sociology, hygiene, home economics, mechanic arts, history, applied science, home nursing, athletic teams, clubs, organizations, campaign drives, and pageants."

Agencies, like the school doctor and school nurses, nutrition classes, Little Mothers' Leagues, school lunches, etc., have an

unquestionable place in Health Education. One cannot ignore them.

If this were merely the organization of subject-matter for the purposes of formal instruction, a narrow and restricted definition might be feasible. But this study in no wise aims to be the basis for a course based on the subject matter of formal instruction. This represents an assembling of objectives and outcomes that relate to the health of the child, for which the school is responsible. Such an interpretation of Health Education would justify the inclusion of all school influences of any kind, regardless of subject or branch of the curriculum, contributing to the objectives and outcomes desired for the health of the child. Under the traditional organization of the various branches of the curriculum, Health Education would include formal health and physical instruction and situations and locations in the various other school subjects, agencies, and activities as noted previously.

Perhaps in this connection the objection of a noted exponent of the Project Method should be recorded: "My way of thinking of the curriculum doesn't seem to make me competent to help you . . ." he wrote. It is presumed that the inherent objection to listing the Objectives and Outcomes of Health Education here implied is on the ground of an assumed formal separation of the various branches of the curriculum. Yet Health Education as defined here need not necessarily be so construed. We are dealing with desirable Objectives and Outcomes, and it is possible that they could be attained as easily, if not more easily, under the Project curriculum as well as the traditional curriculum with its many branches. It should be reiterated. We are dealing with Objectives and Outcomes, rather than Methods.

4. "Facts and principles" are not regarded as ends in themselves. Such realizations are regarded as contributory to the various outcomes and objectives.

No comments or objections were registered by contributors. It should be observed that this explanation or principle is a vital one, definitely involving the discard of all anatomy and "physiology" without significance for conduct control. This is a radical departure from the traditional logically organized

"knowledge" type of course of study. "Knowledge" of physiology and hygiene is not an end in itself, but it is justified only as it contributes to some desirable outcome or objective.

5. "The location of Objectives or Outcomes in the proper grades, elementary or secondary, is not regarded as being within the scope of the present phase of this inquiry."

One comment only—"Good!" (Was it intended to be facetious?) This desirable "location" of Objectives and Outcomes—both in point of time and in point of subject-matter, or "situation" will probably involve years of investigation and experimentation.

6 "This initial and tentative arrangement of Objectives and Outcomes is based on their obvious range and recurrence in life activities."

No comments made. It is a question, of course, whether any formal listing of Objectives and desirable Controlling Outcomes will ever be anything but tentative. Modification must occur with the advance of science and the changes in social conditions.

"Obvious recurrence and range." Some objection may be found to the use of this expression because of the fact that "recurrence" and "range" are both claimed as statistical terms, while in connection with the word "obvious" in this expression, they are used in a non-statistical or even an "anti-" statistical way.

It should be noted that the term recurrence belongs not merely to statistics, but (according to the New Standard Dictionary, 1924), it belongs equally to other allied fields of education connotating in each a somewhat different idea. In the New Standard Dictionary, it is defined first in its non-technical phases: "1. periodical return; frequent occurrence", etc. It is then defined at some length as a psychological term, then as a biological term, then as a meteorological term, and finally very briefly as a mathematical term as follows: "8. (Math.) Same as induction."

It is fair to assume, therefore, that the term "recurrence" is not strained when used in other than a statistical sense. As used here the expression "obvious recurrence" is literally

interpreted as that which obviously and undisputably occurs very frequently, as based on observation in the common experience of everyday life. As representative of such "obvious recurrence" we may cite automobile accidents on Sunday in the summer-time, bathing at seashore resorts, injuries from fireworks on the Fourth of July, etc.

"Range" (according to the new Standard Dictionary, 1924), is the "area or space over or through which anything moves or is distributed" . . . "the extent or limit of variation." The term is used variously in meteorology, botany, zoology, shoemaking, and leather manufacturing. As used here, range is meant to indicate the number of associations in which a thing is educationally useful, whether they are recurring or not."[1] . . . That is, range and recurrence not only determine what useful outcomes are enough useful to be taught, but when and where they should be taught.

7. "A Controlling Outcome" may be defined as any element or form of control that is powerful enough to modify behavior (conduct), e. g., the following: "sensings," "realizations" (of facts or principles), "motives," "standards" or "ideals," "habits," etc."

No comments. "The particular control element or elements through which any education objective finally exercises its control."[2] The subheads under each objective represent the various groups of Controlling Outcomes, through the medium of which the Objectives are to be achieved.

(The term "Objective" is used in a general sense as interchangeable with "aim", "goal", or "end". It is preferred to the other terms because it involves the thought of a goal objective to the individual learner.)[3]

8. "A further analysis of the elements necessary to each "Controlling Outcome" is regarded as highly desirable but beyond the limits of this preliminary phase of the thesis; a matter for later research."

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[1] Yocum: An analysis of Education as Conduct Control, p. 100 and 101 "Recurrence" and "Range."
[2] Yocum, *Ibid.*, p. 6.
[3] Yocum, *Ibid.*, p. 5.

This desirable analysis of each Controlling Outcome will be attempted in Part II of this thesis. Such an analysis, of course, can be only tentative, subject to the results of further research.

Analysis of Reactions to Objectives and Outcomes

In treating the reactions of those who replied to the questionnaire, it was felt that the procedure of treating each objective separately, listing all suggested changes and comments, would be most effective. Accordingly, the suggestions and comments under each objective have been listed and numbered, and to the right of each is a number indicating the frequency of the suggestion or comment. Opposite to each suggestion is a notation under "treatment" showing the disposition made of it.

Some of the replies are inconsequential; a few are obvious duplications. Many suggestions were merely amplifications of groups of Controlling Outcomes already indicated in the form of the questionnaire. These are referred to their proper subordinate place, or places, the letter referring to the objective and the figure to the particular group of Controlling Outcomes under that objective. All suggestions and comments were listed even where they seemed irrelevant or not clear, so that the tabulation under each heading represents both the quantity and the quality of the returns. Notes and explanations have been made wherever it was felt that they were required.

No attempt has been made to revise the original form of organization on a statistical basis. Some attention was paid to frequencies but they were not always significant. Occasionally a contribution of very obvious recurrence and range was made only once, in which case it was labelled accepted and given a proper place. On the other hand, it is felt that many of the suggestions made arose from the failure of the contributor to realize the full significance of the words "this includes *all* Controlling Outcomes *relating to* . . ." which appeared above the various categories of Controlling Outcomes under each objective.

A. THE CONTROL OF PERSONAL CLEANLINESS. This includes all Controlling Outcomes relating to the cleanliness and the care of:

1. Hands
2. Feet
3. Face, Neck, Ears
4. Skin (Bathing)
5. Nails (Finger, Toe)
6. Hair
7. Mouth
8. Teeth
9. Nose
10. Throat
11. Clothing

SUGGESTIONS FOR ADDITIONAL CONTROLLING OUTCOMES:	FREQ.	TREATMENT
1. Ano-genital region	−4	Sub. under A. 4.
2. Household & toilet utensils	−3	" " B. 2.
3. Eyes	−6	" " C. 1.
4. Bed Clothing	−2	" " A. 11. & B. 2.
5. Night Clothing	−2	" " A. 11. & B. 2.
6. Glasses (eye)	−1	" " C. 1.
7. Sick People	−1	" " E. 1. & E. 2.
8. Pets	−1	" " E. 1.
9. Intact surfaces (infectious)	−1	" " E. 1.
10. Care of breaks in surface of skin	−1	" " E. 1; G. 2, 3.
11. Arm pits	−1	" " A. 4.
12. Body	−1	Not clear—probably A. 4.
13. Handling of food	−1	Sub. under A. 1, 9; D. 4.
14. Mind	−1	" " D. 9.
15. Speech, thought, actions	−1	" " D. 9.

SUGGESTIONS FOR OMISSION		REASON GIVEN
A. 10 Throat	−1	Included under Respiration C. 4.

Suggestions and Comments (made by contributors) relating to this Objective:

1. "Largely aesthetic rather than hygienic."—2
2. "Only from point of view of the spread of disease."—1

NOTE: Both of these comments show a tendency to draw the line between that cleanliness which is necessary for good hygiene and that which is necessary for social approval. Two arguments may be advanced against such a proposed distinction. In the first place, the standards of cleanliness demanded for social approval probably have their roots in hygienic values; (and if raising the standards above the safe minimum is not a legitimate function of Health Education and secondly, if these standards of cleanliness for social approval are not demanded under Health Education, where in the curriculum would such outcomes be located?)

(The majority of the contributors seem to have concurred in placing these desirable outcomes of instruction under Health Education.)

3. "Raising the standard or level the real objective."—1
4. "How inspect?" (Note: This legitimate query involves methods rather than outcomes themselves).

Final Form—Objective A—The Control of Personal Cleanliness (no change from original form):

A. THE CONTROL OF PERSONAL CLEANLINESS. This includes all Controlling Outcomes relating to the cleanliness and the care of:

1. Hands
2. Feet
3. Face, Neck, Ears
4. Skin (Bathing)
5. Nails (Finger, Toe)
6. Hair
7. Mouth
8. Teeth
9. Nose
10. Throat
11. Clothing

B. THE CONTROL OF ENVIRONMENTAL CLEANLINESS. This includes all Controlling Outcomes relating to:

1. Clean and Healthful Schools
2. " " " Homes
3. " " " Communities.

SUGGESTIONS FOR ADDITIONAL CONTROLLING OUTCOMES	FREQ.	TREATMENT
1. Places of Work and Business	—4	Sub. under B. 3.
2. Factories and Stores.....	—2	" " B. 3.

3. Churches	−3	"	"	B. 3.
4. Club Houses	−1	"	"	B. 3.
5. Places of Amusement	−1	"	"	B. 3.
6. Public Buildings	−1			
7. School Bus	−1	"	"	B. 1.
8. School lunch rooms	−1	"	"	B. 1.
9. Milk bottles (school lunch)	−1	"	"	B. 1.
10. School grounds and school toilets	−1	"	"	B. 1.
11. Playgrounds	−3			B. 3.
12. Camps and Camp grounds	−2	representing places		B. 3.
13. Parks and Recreatory Resorts	−1	of community life		B. 3.
14. Picnics	−1			B. 3.
15. Railroad trains and street cars	−1			B. 3.
16. Appreciation of conditions by contrast	−1	(not clear)		B. 3.

SUGGESTIONS FOR OMISSIONS		REASON GIVEN
B. 1—Schools	−1	A part of community
B. 2—Homes	−1	A part of community

Suggestions and Comments (made by contributors) relating to this objective:

1. "Too general"—1
2. "'Communities' too large, or too limited."—1
3. "Too inclusive to mean much—some 50 to 100 specific items should be given."—1
4. "Too brief—needs more time in the Health Program than its size would indicate."—1

NOTE: All four of these comments seem to center about the thought that Controlling Outcomes given here need more specific treatment. This will be given in the proper place in the form of Contributory Outcomes. These too will of necessity be somewhat general in character. It is felt that a whole field of research is open under the headings of these Controlling Outcomes.

5. "Raising the standard or level the real objective"—1

GENERAL NOTE: It is realized of course that "Homes and Schools" are logical parts of "communities." They are singled out for separate treatment, however, because of the intimate relationship existing between them and the pupil. All other allied groups of outcomes are treated under "communities."

Final Form of this Objective. (No change):

B. THE CONTROL OF ENVIRONMENTAL CLEANLINESS. This includes all Controlling Outcomes relating to:

1. Clean and Healthful Schools
2. " " " Homes
3. " " " Communities.

C. THE CONTROL OF THE NORMAL FUNCTIONING OF CERTAIN PARTS OF THE BODY. This includes all Controlling Outcomes relating to the care of:

1. Organs of the Special Senses .....
2. Circulatory System
3. Digestive System .....
4. Respiratory System
5. Excretory Systems .....

SUGGESTIONS FOR ADDITIONAL CONTROLLING OUTCOMES	FREQ.	TREATMENT
1. Nervous System	−12	Accepted as C. 6.
2. Reproductive System	−7	" " C. 7.
3. Muscular System	−5	" " C. 8.
4. Neuromuscular System	−3	" " C. 8.
5. Skeletal System	−2	" " C. 9.
6. Skin	−2	See A. 4.
7. Throat, Tonsils	−1	Sub. under C. 4.
8. Emotions	−1	See D. 9.
9. Medical Inspection of Pupil	−1	(a method, not outcome)
10. All devitalizing drains	−1	See D. 11, 12, 13, etc.
11. Glandular System	−1	Accepted as C. 10

SUGGESTIONS FOR OMISSIONS

None

Suggestions and Comments (made by contributors) relating to this objective:

1. "'Control' (should concern) faulty functioning—or where organically unsound or defective conditions exist."—1
2. "Raising the standard for disease prevention."—1

3. "Doubtful for younger children and to a limited degree for older pupils."—1

NOTE: This contributor evidently has reference to the great mass of physiological and anatomical data that would be possible under these headings in a traditional and logically organized Course of Study. Where, as in this case, an attempt is made to organize subject-matter only on the basis of outcomes that function in control, subject-matter that does not function in such control is automatically eliminted.

4. "Some 15 or 20 specific items needed."—1

NOTE: These, and more, will be furnished in the form of Contributory Outcomes.

Final Form of This Objective (as revised)

C. THE CONTROL OF THE NORMAL FUNCTIONING OF CERTAIN PARTS OF THE BODY. This includes all Controlling Outcomes relating to the care of:

1. Organs of the Special Senses
2. Circulatory System
3. Digestive System
4. Respiratory System
5. Excretory Systems
6. Nervous System
7. Reproductive System
8. Muscular System
9. Skeletal System
10. Glandular System

D. THE CONTROL OF NORMAL GROWTH AND ENERGY. This includes all Controlling Outcomes relating to:

1. Fresh Air
2. Sunshine
3. Drinking Water
4. Food .....
5. Elimination of Body Waste
6. Work, Exercise, Play .....
7. Proper Posture
8. Sleep and Rest .....
9. Mental Habits
10. Clothing (sleection)
11. Alcohol
12. Tobacco

SUGGESTIONS FOR ADDITIONAL CONTROLLING OUTCOMES	FREQ.	TREATMENT
1. Tea and Coffee.....	—5	Accepted as D. 13.
2. Narcotics and other drugs...	—11	" " D. 14.

3. Patent Medicines	−2	Sub. under D. 14.
4. Standards (height, weight, and lung capacity)	−2	
5. Religion	−1	Not clear. Perhaps D. 9.
6. Relaxations	−1	Sub. under D. 6, 8, 9
7. Correction of Physical Defects	−1	Under C. 1, 2, 3, 4 and others
8. Eating between meals	−1	Sub. under D. 4.
9. Too much soda, pop, etc.	−1	" " D. 3 and 4.
10. Self-diagnosis and medication	−1	" E.
11. Recreation	−1	" " D. 6 and 7.
12. Companions	−1	" " D. 6 and 9.
13. Ventilation (in lieu of Fresh Air	−1	A means, rather than end
14. Proper sight (eyes)	−1	A means, rather than end
15. Personal Cleanliness	−1	See A.
16. Cosmetics	−1	Sub. under A. 3 and 4.
17. Sex Function	−1	Accepted as D. 15.

SUGGESTIONS FOR OMISSION		REASON GIVEN
D. 1. Fresh Air	−1	"Ventilation" (in lieu of)
D. 5. Elimination, etc.	−2	Belongs in C. 5.
D. 6. Work, Exercise and play.	−1	Another classification suggested
D. 7. Proper Posture	−1	"Correct" Posture better
D. 8. Sleep and Rest	−1	Another classification sug.
D. 9. Mental Habits	−1	" " "
D. 10. Clothing	−1	" " "
D. 11. Alcohol	−1	None given
D. 12. Tobacco	−1	" "

Suggestions and Comments (made by contributors) relating to this objective:

1. "'Correct' posture rather than 'proper' posture."—1
Note: Re-wording accepted.

2. "Alcohol and tobacco should be included if taught with moderation and good sense."—1

3. "Sex function—why not these (Controlling Outcomes) when they are the most important of all?"—1

4. "More emphasis on Mental Habits."—1

NOTE: Continual emphasis throughout the replies on Mental Habits, Mental Hygiene, etc., leads one to the consideration of the advisability of an additional objective "The Control of Mental Health." Further consideration of this is given under "H" "The Control of the Emotions and Ideals." to be hereafter considered.

Final Form of This Objective (as revised):

D. THE CONTROL OF NORMAL GROWTH AND ENERGY. This includes all Controlling Outcomes relating to:

1. Fresh Air
2. Sunshine
3. Drinking Water
4. Food
5. Elimination of Body Waste
6. Work, Exercise, Play
7. Proper Posture
8. Sleep and Rest
9. Mental Habits
10. Clothing (selection)
11. Alcohol
12. Tobacco
13. Tea and Coffee
14. Narcotics and other drugs
15. Sex function

E. THE CONTROL OF DISEASE. This includes all Controlling Outcomes relating to:

1. Prevention
2. Proper Medical Attention

. . . . . .

SUGGESTIONS FOR ADDITIONAL CONTROLLING OUTCOMES	FREQ.	TREATMENT
1. Prevention, individual	−2	Accepted as E. 1. & E. 2;
2. Prevention, social		Proper Med. At. made E. 3.
3. Keeping vitality high	−2	Sub. under E. 1. (new)
4. Immunization	−2	" " E. 1. & E. 2.
5. Vaccination	−1	" " E. 1. & E. 2.
6. Prophylaxis	−1	" " E. 1.
7. Control of Contagion	−1	" " E. 2.
8. Home Care and Nursing	−1	" " E. 3.
9. Symptoms	−1	" " E. 3.

10. Selection of a Physician.....	−1	"	" E. 3.
11. Acquiring a Health Consciousness (Somathesia).....	−1	"	" E. 1.
12. Contrasting and Conflicting Theories of Disease.....	−1	Not clear (perhaps E. 1.)	
13. Adjustment of life in accordance with powers and limitations of body and mind.....	−1	Sub. under E. 1.	
14. Health Department Regulations.....	−1	"	" E. 2.
15. School Inspection and Regulations.....	−1	"	" E. 1. & E. 2.
16. Avoidance of contact.....	−1	"	" E. 1. & E. 2.
17. Proper public attitude in case of the rapid spread of a new disease or new form of disease	−1	"	" E. 2.
18. Bacterial life.....	−	"	" E. 1.
19. Protozoal life.....		"	" E. 1.
20. Insect life.....		"	" E. 1.
21. Food deficiency ailments....		"	" E. 1.

SUGGESTIONS FOR OMISSION	REASON GIVEN
E. 1. Prevention.....	−2 Should be split up into individual and social

Suggestions and Comments (made by contributors) relating to this objective.

1 "Rather brief—needs more time in Health Education Program than its mere size indicates."—1

NOTE: Agreed.

Final Form of This Objective (as revised):

E. THE CONTROL OF DISEASE. This includes all Controlling Outcomes relating to:

1. Prevention, Individual
2. Prevention, Social
3. Proper Medical Attention.

F. THE CONTROL OF ACCIDENTS. This includes all Controlling Outcomes relating to the prevention of accidents:

1. At Home
2. At School
3. On the Street
4. In the country .....
5. At the Seashore .....
6. At Play
7. To the Baby

SUGGESTIONS FOR ADDITIONAL CONTROLLING OUTCOMES	FREQ.	TREATMENT
1. At Work (Factories, Industries, etc.)	−12	Accepted as F. 8.
2. Traveling (trolley, train, auto)	−3	" " F. 9.
3. In Public Places	−2	Sub. under F. 3. and 9.
4. In a Crowd	−2	" " F. 3. (new)
5. Play (Scooter, Roller Skates, Bicycle, Sled)	−1	" " F. 6.
6. On a Hike	−1	" " F. 9.
7. In the City (in lieu of Street)	−1	Accepted as F. 3.
8. Rowing, canoeing, sailing	−1	Sub. under F. 4, 5, 9.
9. On the Ice	−1	" " F. 6.
10. In the mountains	−1	" " F. 9.
11. In the forests	−1	" " F. 9.
12. At fires (home, school, woods)	−1	" " F. 1, 2, 9, 10.

SUGGESTIONS FOR OMISSION	REASON GIVEN
F. 7. To the Baby	Improper type classification

Suggestions and Comments (made by contributors) relating to this Objective.

1. "Make to read 'to self and others'."—1

NOTE: This is implied in the outcomes. Re-wording might clarify the meaning, however.

2. Another contributor feels that there is a lack of uniformity in organizing the various groups of Controlling Outcomes, e. g., 1, 2, 3, 4, and 5 relate to "place"; 6 relates to "activity", 7 relates to "age." He also feels that they are "not co-ordinate" in value.

NOTE: Reference to the Twenty-fifth Year Book of the National Society (Safety Education) particularly pages 106–107, 126–127, 275, etc., indicates no distinctions such as those here suggested by this contributor. The tendency of classification is similar to the outline used in the questionnaire.

3. Still another feels that the organization of Controlling Outcomes is "not good—the 'place' is not significant, cause is—heat, light, electricity, moving bodies, etc."

NOTE: "Cause" is significant but it is questionable if classification on this basis would be the most effective form of organization. The general trend in the Twenty-fifth Year Book (as noted above is to organize on the basis of "situations" or "locations" of obvious recurrence and range.

It has still to be shown, however, that "cause" is any more effective or any more integrating than "place,", activity,'' or other familiar "situation" as a basis for organizing Controlling Outcomes for safety-first.

Final Form of this Objective (as revised):

F. THE CONTROL OF ACCIDENTS. This includes all Controlling Outcomes relating to the prevention of accidents:

1. At Home
2. At School
3. In the City
4. In the Country
5. At the Seashore
6. At Play
7. To the Baby
8. At Work
9. When Traveling

G. THE CONTROL OF EMERGENCIES IN HEALTH. This includes all Controlling Outcomes relating to "First Aid" treatment of:

1. Nose Bleed
2. Cuts
3. Bruises
4. Sprains
5. Broken Bones
6. Burns
7. Fainting
8. Poisons (swallowed)
9. Electric Shock
10. Sun stroke
11. Heat Exhaustion
12. Drowning
13. Asphyxiation (gases)

.....

.....

SUGGESTIONS FOR ADDITIONAL CONTROLLING OUTCOMES	FREQ.	TREATMENT
1. Snake Bite	−5	Accepted under new Controlling Outcomes, G. 14 —Bites
2. Joint Injuries	−4	Accepted in lieu of 4.
3. Asphyxiation (illuminating gases, automobile exhaust)	−2	Sub. under G. 13.
4. Bites (snakes, other animals)	−2	Sub. under G. 14.
5. Bites (insect)	−2	" " G. 14
6. Hiccough	−2	Accepted as G. 15.
7. Asphyxiation (drowning)	−1	"Gases is eliminated
8. " (hanging)	−1	from the title of G. 13,
9. " (smoke)	−1	and all forms of asphyxiation are to be included under it.
10. Poisons (external and internal)	−1	Accepted in lieu of G. 8.
11. Blows on abdomen (paralysis of diaphragm)	−1	Sub. under G. 13.
12. Strangling (choking)	−1	Accepted as G. 16.
13. Objects swallowed	−1	" " G. 17.
14. Swallow Tongue	−1	(G. 22?) (not clear)
15. Asphyxiation (electric shock)	−1	Sub. under G. 13.
16. Poisonous Plants	−1	Accepted as G. 8. (new)
17. Wounds by Gunshot	−1	Accepted as G. 18.
18. Simple Bruises	−1	See G. 3.
19. Objects in Eye	−1	Sub. under C. 1.
20. Freezing	−1	Accepted as G. 19.
21. Knocked Out Tooth	−1	Accepted as G. 20.
22. Major Epileptic Fits	−1	Accepted as G. 21.
23. Colds	−1	Sub. under E (1, 2, & 3)
24. Cramps	−1	Accepted as G. 22.
25. Burning Clothing	−1	Accepted as G. 23.
26. Nausea	−1	Accepted as G. 24.
27. Frost-Bite	−1	Sub. under G. 19.
28. Blister	−1	Accepted as G. 25.

SUGGESTIONS FOR OMISSION

None

Suggestions and Comments (made by contributors) relating to this Objective:

1. "In these days of phones, autos, hospitals, and physicians at every corner, it seems to me there is less and less need for such emphasis on "First Aid" in any but rural communities."—1

NOTE: This interesting comment might receive considerable concurrence.

2. "Really a part of F"-2

NOTE: There is indeed a certain strain of relationship between these two objectives, but it does not persist in all cases. "F" refers to certain preventive measures; "G" refers to remedial measures, not all of which concern preventable occurrences.

Final Form of This Objective (as revised):

G. THE CONTROL OF EMERGENCIES IN HEALTH. This includes all Controlling Outcomes relating to First Aid treatment of:

1. Nose Bleed
2. Cuts
3. Bruises
4. Joint Injuries
5. Broken Bones
6. Burns
7. Fainting
8. Poisons, external and internal
9. Electric Shock
10. Sun Stroke
11. Heat Exhaustion
12. Drowning
13. Asphyxiation
14. Bites
15. Hiccough
16. Strangling
17. Objects Swallowed
18. Wounds by Gunshot
19. Freezing
20. Knocked Out Tooth
21. Major Epileptic Fits
22. Cramps
23. Burning Clothing
24. Nausea
25. Blister

H. SUGGESTIONS FOR ADDITIONAL OBJECTIVES:

1. "History of the Growth of Community Health."

NOTE: Is this not subject-matter that should result in certain outcomes relating to community health, the control of environmental cleanliness, the control of disease, etc.?

2. "Famous Contributors to Health Knowledge."

NOTE: This, too, is felt to be subject-matter to be sifted and used to secure certain outcomes in the form of realizations, attitudes, motives, etc.

3. "Control of Social (Sex) Life."

4. "Race culture (eugenics), etc."

5. "Social Hygiene or Sex Education—more important than any you have stated—social hygiene and the proper application of the sex instinct will immeasurably increase the sum total of human happiness, will guarantee a more vigorous and virile posterity, while incidentally, the attainment of this objective will even more effectively eliminate venereal disease."

NOTE: (on 3, 4, and 5). There seemed to be considerable demand for a group of Controlling Outcomes that would adequately emphasize this aspect of control. Comments in other parts of the questionnaire stressed this problem. However, under Objective D., "The Control of Normal Growth and Energy", inclusion has been made of D. 15, all Controlling Outcomes relating to the "Sex Function." Pending further investigation it is felt that this group of outcomes are peculiarly well placed as a sub-head under this objective.

6. A nationally famous director of research argues for an additional objective—"A Philosophy of Health" and elaborates his ideas as follows:

"H—*Philosophy of Health*—what physical fitness means
- genetically
- historically
- individually
- socially
- for the future

Individual and Social Responsibility
- for self
- for others
- for improvement

Relation to Intelligence

Relation to Wealth

Relation to Ideals

Measures and Standards of Health

Methods of Appraisal
- (a) Individual
- (b) Social

NOTE: The value of such a philosophy of health cannot be denied. It is felt, however, that such a philosophy manifests itself in outcomes, that it is a medium or a motive through which outcomes and objectives are ultimately

achieved rather than an end itself. The initial formulation of objectives for Health Education was based on conduct control, and this formulation has been accepted by practically all of the contributors in their replies. It is felt, therefore, that a "philosophy" is not an end or an objective in itself, but it does enter into and function throughout the other objectives and their respective controlling outcomes.

7. "Control of Community Co-operative Action."

NOTE: This, it is felt, is taken care of under B—The Control of Environmental Cleanliness, and E—The Control of Disease.

8. "Attitudes—development of disposition to participate in the expansion of the play concept."

NOTE: Not clear. Probably provided for under D-6.

9. "Control of Motives and Ideals. This includes all Controlling Outcomes relating to the conscious purposes underlying health, study, and activity:

At Home
At School
In the Community
In the Nation
In the World"

NOTE: This carefully prepared suggestion puts into concrete from an insistent demand noticeable in many portions of the returned questionnaires, for more emphasis on the mental aspects of health. Numerous suggestions to this end will be noticed in the digest of the comments made, particularly pages 50 to 53. In view of this noticeable emphasis and in view of its acceptability of form, this suggestion is, therefore, accepted as (tentative) "Objective H., The Control of Motives and Ideals." As its particular form, wording, organization of Controlling Outcomes, etc., lacks the same subjection to the opinion of selected authorities that the other objectives have had—it cannot be accepted to the same degree as the others. It is, therefore, accepted in much the same sense as the original objectives were accepted in their preliminary organization. This objective has "obvious recurrence and range."

Analysis of "Comments" of Seventy-two "Favorable" Responses

(Merely commendatory remarks have been omitted)

1. "More emphasis on Mental Health"—3

NOTE: See note above. Also Objective H.

2. "Too much individual, not enough public, health."—1

NOTE: It has been previously indicated that the amount of space given to Objective B—The Control of Environmental Cleanliness—(3) Clean and

Healthful Communities, is not necessarily an indication of the emphasis or time to be devoted to it. This also applies to Objective E—The Control of Disease—(2) Prevention, Social.

3. "Interested in your notion of control. To what extent does mental attitude and disposition to carry on enter into your outline? What about persons who are defective in some way—heart defects, cripples, etc.? The question of method is also of vital consideration."

NOTE: (a) Attitudes are considered as types of outcomes, indispensable in character. In Part II—Analysis of Controlling Outcomes, an effort has been made to give due attention to this important type of outcome.
(b) The program (and the curriculum) must be adjusted to the needs and abilities of the learner. When possible, and advisable, the individual should adapt himself to meet health standards.
(c) Motivation is more properly a method by which outcomes and objectives are attained, rather than an outcome and objective in itself.

4. "The program must be modified to suit the community. I mean—if a family of ten live in two rooms, we are probably wasting our time advocating so many tub-baths a week."

NOTE: Agreed. This also indicates the need of "Adaptation" and "Adjustment" as pointed out in the previous note.

5. "Objectives E. and F form a group secondary in importance to A. B. C, and D."

NOTE: This interesting comment opens a path for future investigation. No attempt has been made, a matter of regret, to evaluate these objectives.

6. "I felt like including under E, etc., the virtue of Introspection, but I know that many people would warp that function into a vice. Nevetheless, we do not consciously control the health of the body to any extent unless we receive information of the changing phases of health (and disease) in our body. We must know ourselves. This might be summed up in the single word—Introspection—in its best sense."

NOTE: Under the various groups of Controlling Outcomes (and Contributory Outcomes) in Part II—an attempt will be made to take into consideration the obviously valuable attitude of "Introspection."

7. "Health Education certainly includes measurement or survey of the results of instruction. This is possibly the most fruitful field for experimentation at the present time.

A cursory glance at the items you have listed indicates that they should all be included. Unfortunately they are not all inclusive. I wonder if you are familiar with"—(a Health Scale and a certain series of Books).

NOTE: (a) It is questionable if measurement of results can be classed as either an objective or an outcome, although certain standards might be so

regarded. Measurement of results is perhaps more of a means of (motivation) or perhaps a test of the effectiveness of, instruction.

(b) Part II of this thesis attempts to give in greater detail the assembling of outcomes here suggested.

8. "My only suggestion is that I should be glad to see mental hygiene emphasized more concretely than by the mere mention of mental habits."

NOTE: See pages 53, 60.

9. "The matter to be placed under these headings is the important thing rather than their naming and arrangement. The methods pursued—example, practice—all are vital."

NOTE: This dissertation does not deal with methods or specific subject-matter except as they may be to some extent involved in the organization of Objectives and the desirable Controlling Outcomes. How they can best be attained is beyond the limits of this thesis.

10. "I approve of all the objectives listed above, and I think they are comprehensive. The problem of objectives, however, is not as important as the problem of awakening an interest in young people in the preservation of health. Children are not interested in health for its own sake; on the contrary, they are hostile to the observance of health control under present-day conditions, especially in centers of congested population. A child might memorize material relating to all the objectives mentioned above and still be utterly indifferent to the preservation of health and antagonistic to rules and regulations having to do with health control. So that it is not enough merely to agree upon a list of topics to be taught to children; the more vital task concerns the way in which interest in the maintenance of health can be awakened in the young."

NOTE: See previous note.

11. "Where is Fire Prevention? Ventilation? Drafts? Self-Control (over-eating and drinking, sweets, etc.)?

NOTE: Fire Prevention—sub. under F-1, 4, 6, 9, etc.
Ventilation " " D-1
Drafts " " D-1
Self-control (etc) " " D-4

12. "My only comment would be that with the modern understanding of psychology there should be proper emphasis on the positive side of the mental attitude to health and life in general. A program of this sort might instill a good many fears without emphasizing sufficiently the naturalness and "rightness" and expectation of health in a normal child even in an environment which may have defects from the ideal standpoint."

NOTE: Agreed. See "Limiting Elements" of the Health Education complexes as analyzed in Part II of this theiss.

13. "I am confident that my answers are not helpful to you. My judgment is that answers to such questions will avail nothing. My suggestion is that you select a definite number of specific outcomes in these various groups, as representatives of a wider range; that you next attempt to find the frequency of occurrence in specified circumstances."

NOTE: This comment is one by a contributor who desired more and specific detail under the various objectives. An attempt to supply this detail will be found in Part II. The type of desirable investigation here pointed out is the type of scientific investigation which will be required to substantiate the analysis of Part II before validity of the type currently accepted as scientific can be claimed for it.

14. "The chief objective is omitted—the arousal of purpose to do all that follows: of course, 'control' means purpose but I believe it should be specified. The entire outcomes should be written in terms of man, not cleanliness."

NOTE: Not clear.

Analysis of Comments made in Replies Classed as "Unfavorable"

(The following three comments were made by a well-known authority on the curriculum)

15. "I should, personally, make two major heads, one the prevention of disease, and the other the cure of disease, separating the latter into two categories—one of which is strictly personal hygiene and the other is depen dence upon medical expert service."

NOTE: This interesting suggestion has much in its favor. It noticeably bases its categories on "control". Is it not probable, however, that under these two main headings some sub-classification (similar to the one given here) would be necessary?

16. "I do not personally believe that so much emphasis should be given to personal cleanliness. There are only a few factors in personal cleanliness that are of direct significance either to personal health or to the health of others. These should be distinguished, since the primary purposes of teaching cleanliness are other than health, much loose thinking to the contrary, notwithstanding. If you had used some such words as 'healthfully clean' it would be better. Clean and healthful homes is certainly a misstatement in this study."

NOTE: The inadvisability of eliminating from Health Education Standards of cleanliness necessary for social approval has been previously dwelt upon. See page 48.

17. "In your title it seems to me that distinctions should be made between actual outcomes realized today, and desirable outcomes."

NOTE: Agreed. This investigation, of course, concerns itself only with the possible desirable outcomes, based on their obvious recurrence and range. No effort was made to collect data on actual outcomes realized today.

The following comment was made by the director of a health organization:

18. "In order to meet certain objections which have been offered to similar plans in the past, it is suggested that the word 'control' be eliminated, and that you substitute therefor the expression 'instruction in'; that is, for 'A' in Part One, substitute the following, namely: "Instruction in Personal Cleanliness; for 'B' 'Instruction in Environmental Cleanliness,' etc."

NOTE: As the formulation of the Objectives and Controlling Outcomes for the purpose of this questionnaire was based on the idea of the "conduct control" and the direct sub-ordination of "knowledge" as an end in itself, it was felt that this reply should be regarded as a distinctly "unfavorable" response. It is felt that there is in the nature of this reply some evidence of a misunderstanding of the term "objective." Instruction itself is surely not an objective.

The comment made in the third and final unfavorable reply has already been discussed under the definition of Health Education on p. 42-43.

Summary of Analysis

It is felt that the analysis revealed several outstanding points:

1. That there was general acceptance of the form of organization, based on conduct control.
2. That the suggested Controlling Outcomes were, in the main, acceptable.
3. That there were noticeable demands for increased emphasis on Mental Health.
4. That there was considerable demand for the inclusion of Sex Education.
5. That not a single objection was registered against the inclusion of "Safety-First" in Health Education. This is interesting in view of the general discussion (Twenty-fifth Year Book, particularly p. 96–101) on the place of Safety Education in the curriculum.

6. Evidence of a strong demand for adequate motivation to secure the Outcomes and Objectives, noted here.

7. A marked demand for measurement of the effectiveness of Health Education—testing for Outcomes and Objectives.

It should be borne in mind, however, that no "scientific validity" is claimed for this organization of Objectives and Outcomes. The nature of the questionnaire itself and the relatively small number of contributors would dictate such a reservation. It is felt, however, that while the number of replies received was small, yet they carried considerable weight, as they represented the opinion and the reaction of experts. Seventy-two of the seventy-five usable replies were favorable, many of them containing comments or suggestions of obvious value. Such a consensus of professional opinion, it is felt, constitutes a strong endorsement of the Objectives and the Controlling Outcomes of Health Education as herein outlined.

PART II

Introduction:

The major and final part of the educational analysis consists in building up about each "Controlling Outcome" a system to make it controlling of conduct. This system of outcomes is known as a "complex." It is an *educational* complex, built up to secure a definite control of conduct through the insuring of a specific Controlling Outcome. The educational complex with its careful arrangement of outcomes for the securing of a worthy educational end, should be carefully distinguished from the Freudian Complex, frequently associated with pathological conditions. All outcomes included in the educational complex—since they *contribute* to the final or Controlling Outcome are known as Contributory Outcomes.

In building up the Health Education Complex to insure each Controlling Outcome, an attempt has been made to indicate the *probable* classification of each of the *Contributory* outcomes on the basis of certain principles of classification used in this division of the field.

It is assumed that there should be a sufficient *number* of outcomes to make *each* desirable controlling outcome actually controlling in human conduct. It is further assumed that these outcomes may be classified according to their character or function.

Some of the outcomes may reasonably be expected to be—and should be—*strengthening elements*, i. e. outcomes that *tend* to strengthen and impress the desired control.

Some of these contributory outcomes may reasonably be expected to be—and should be—in their nature, *counteracting*[4] elements, i. e. outcomes that tend to negate or nullify already existing undesirable tendencies or practices.

Some of these contributory outcomes may reasonably be expected to be in the nature of *completing elements*—i. e. outcomes needed for the successful completion of the controlling elements—insuring its usefulness.

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[4] The need of outcomes of this type is pointed out by Bobbitt.

Some of these contributory outcomes may reasonably be expected to be—and should be—*limiting elements*—i. e., outcomes that may possibly prevent the controlling outcome from being carried out to an extreme degree, or to an excess beyond the limits of reason or common sense.

Some contributory outcomes may reasonably be expected to be—and should be—*transferring elements*—i. e., outcomes that are general in character, capable of being variously applied in different situations, tending, where possible, to secure for the controlling outcome a control that is as generally useful as possible.

It is not regarded as vital to the complex that the classification of the various desirable outcomes be exact, but rather approximate. Some contributory outcomes might well be placed in several categories, and the classification of none of them can be regarded as fixed or certain until the classification is either confirmed by, or revised in the light of, scientific experimentation. The present classification is tentative and is designed to assure, as far as possible, the completeness or general (not absolute) inclusiveness of the assembling of the outcomes entering into each complex. In other elements, counteracting elements, etc., are merely designated in order that no important phase of control be omitted—that the controlling system or complex be well-rounded and complete.

It should be noted also that the assembling of outcomes cannot be regarded as final and complete. It is inclusive only to the extent that it is based upon an examination of certain texts, courses of study, and special references, and further in that an attempt has been made to list the contributory outcomes under the various types of control elements.

Procedure in the Educational Analysis

1. Determination of the "*Objectives*" of Health Education. The determination was based on logical analysis from the standpoint of control. (See Chapters II and III.)

2. Determination of the "*Controlling Outcomes*" by which each objective is obtained, and through which it functions.

These Controlling Outcomes were selected because of their outstanding prominence as major outcomes is an examination of 34 pupils' texts, 17 courses of study, miscellaneous references from 16 organizations related to the public health, and 5 references works (medical). This tentative arrangement of Controlling Outcomes was checked in the questionnaire and rearranged on the basis of criticisms of that classification. (See Chap. II and III.)

3. Organization of "*Health Education Complexes*" to insure probability of securing the various Controlling Outcomes. This involved, and was based on:

(a) Search for suggestions for desirable contributory outcomes, using the reference materials previously indicated.
   a—pupils' texts
   b—courses of study
   c—special references.

(b) Classification of the suggested desirable outcome as a *form* of control (see Appendix A), or as a Control element (see Appendix A).

(c) Further classification of each contributory outcome as one of the elements of the complex (see p. 66, 67). It should be noted that this classification is logical and tentative, subject to later verification in the light of experimentation. In one sense, the exactness of the "label" on the outcome is immaterial. The really important fact is that it is there. This attempt at formal classification of the elements of the complex is a marked departure from any of the previous studies (noted on p. 17-19) in the field. Heretofore research workers in this division of the field have pointed out that there were certain types of elements in the complex, but they have made no attempt to classify outcomes under these categories.

The Organization of the Health Education Complexes:

At this point, it should be remembered:

1. that the assembling of outcomes which begins shortly hereafter is not intended to be an "inclusive" assembling. It is

a provisional assembling of outcomes based on their obvious recurrence and range as suggested by certain sources:

(a) 34 pupils texts of recent date. A study of the distribution of the dates (copyright) of these texts shows the following:

*1912 — 1—(a book on industrial hygiene)
*1916 — 3—(three books involving unusual approach)

1920 — 6
1921 — 4
1922 — 2

Median — 1923

1923 — 5
1924 — 8
1925 — 5

Total 34

As a general proposition, 1920 was chosen as the lower limit for recent books because it represents the year when in response to conditions revealed by the draft,[5] and perhaps to an increased consciousness of the desirability of health brought about by the war—a general revision of health texts and the issue of new ones began. Three exceptions were made (in the cases noted) because of peculiar contributions of the books involved. An inspection of the bibliography will reveal the fact that fourteen text-book publishing houses are represented.

(b) 17 courses of study, selected on the basis of reputable recommendations (see p. 11).

15 courses of study in health and hygiene
2 courses of study in civics

17 total

(c) Miscellaneous Reference Material (see pages 11 and 12 and Appendix B) with the addition of four reference texts on the teaching of Civics, used in connection with the working out of the new Objective (H), not originally included in the Questionnaire.

[5] See Report of Joint Committee, Chapter I.

(d) suggestions made on replies to questionnaire regarding desirable outcomes and contributory outcomes.

2. that the organization of outcomes under the various elements of the complex is tentative, subject to verification by later investigation.

3. that the entire worth of the application of the educational complex to the field of Health Education, being as yet unproved, is merely a reasonable hypothesis.

4. that this hypothesis represents the first great step in research, the step which must be completed before actual scientific determination can take place. (Bobbitt in "The Making of the Curriculum," p. 1 to 10, discusses the value of such analysis "still upon the level of hypothesis. . . ." "We must define them as best we can for working purposes; and then further clarify our vision through the two methods of scientific research and of dealing practically with them. It is well to have a proportioned vision of the whole field even though many spots be obscure and problematical.")

Further reference to the probable value of a contribution of this nature may be found on page 14 of Chap. I, and page 262 of Appendix A.

The Analysis

(This analysis, objective by objective, herewith follows.)

OBJECTIVE A.

The Control of Personal Cleanliness

This includes all desirable Controlling Outcomes relating to:

	HEALTH EDUCATION COMPLEX
1. Hands	A-I
2. Feet	A-II
3. Face, Neck, Ears	A-II
4. Skin (Bathing)	A-II
5. Nails (Finger, Toe)	A-III
6. Hair	A-IV

7. Mouth.....A-V
8. Teeth.....A-VI
9. Nose.....A-VII
10. Throat.....A-VII
11. Clothing.....A-VIII

A-I. Desirable outcomes relating to the care of the hands.

HEALTH EDUCATION COMPLEX A-I
(Controlling System)

Controlling Outcome:

The HABIT of keeping the hands clean.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The REALIZATION that one's own health may depend on clean hands.

2. The REALIZATION that the health of others may depend on clean hands.

3. The REALIZATION that disease germs often enter the body from the hands (through the mouth or open wounds).

4. The ATTITUDE of desiring to have the social approval that is contingent upon the having of clean hands.

Counteracting Elements:

1. The REALIZATION that the having of dirty hands in the presence of others is an act of discourtesy showing a lack of respect and consideration (to counteract carelessness regarding the condition of one's hands).

2. The ATTITUDE of being loth to soil or injure the value or the appearance of any article (books, fabrics, etc.) by subjecting them to contact with dirty hands or fingers (to counteract the soiling of books and other objects).

3. The REALIZATION that moistening the fingers with saliva is not only dangerous to the individual, but to others as well (to counteract the tendency to moisten the fingers when counting money, turning the pages of a book, etc.).

Completing Elements:

1. The HABIT of having soap, water and towels easliy accessible (Note responsibility of school officials for such provision).

2. The HABIT of keeping the hands away from the face at all times.

3. The HABIT of wearing rubber gloves where there is danger of infection.

4. The HABIT of washing the hands in a mild disinfectant solution after they have been exposed to infection.

5. The HABIT of "brushing" the hands when washing them.

6. The HABIT of drying the hands firmly and thoroughly, preferably with a coarse towel.

7. The REALIZATION that both (5) and (6) above probably help to remove and destroy germs.

8. The REALIZATION that people who seem to be in good health are often "carriers" of disease germs in their mouths and throats.

9. The HABIT of keeping the hands and fingers away from boils, pimples, open wounds, etc.

10. The HABIT of washing hands before touching food in preparation for the table, or for eating.

11. The HABIT of keeping hands and fingers out of food and drink.

12. The HABIT of washing the hands before and after meals.

13. The HABIT of washing the hands after going to the toilet.

14. The HABIT of washing the hands before going anywhere (school, church, social visit, etc.)

15. The REALIZATION that if the hands have been made dirty by play in the school yard, they should be washed before returning to the classroom.

Limiting Elements:

1. The REALIZATION that hands should be kept away from the face even though they seem to be clean.

2. The REALIZATION that even after hands have been washed in soap and water, bacteria and disease germs often remain.

3. The REALIZATION that one should not hesitate to get the hands soiled if necessary to some needful activity or praiseworthy act—with the COUNTER-BALANCING realization that they should be washed or disinfected immediately afterward.

Transferring Elements:

1. A SENSING of discomfort if one has unclean hands—when they should be clean.
2. An ATTITUDE of desiring to have clean hands whenever possible.

A-2, 3, 4. Desirable outcomes relating to the cleanliness and care of the feet, face, neck, ears and skin (bathing).

HEALTH EDUCATION COMPLEX A-II

(Controlling System)

Controlling Outcome:

The HABIT of keeping the skin clean.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. An ATTITUDE of desiring to maintain one's self-respect.
2. An ATTITUDE of desiring to have the respect of others.
3. A SENSING of the physical satisfaction that comes from bathing.
4. The REALIZATION that frequent bathing helps to make body odor less noticeable.
5. A REALIZATION of the importance of a clean skin in case of accident (skin, wounds, etc.).
6. The REALIZATION that the Finns and the Japanese, both regarded as "hardy" races, bathe a great deal.[6]
7. The REALIZATION that a clean skin assists materially in the elimination of waste.
8. The REALIZATION that frequent bathing and washing will probably help us to avoid diseases of the skin.
9. The REALIZATION that the skin (pores) is a sort of safety-valve for the regulation of the heat of the body and that a clean skin aids materially in this regulation.
10. A REALIZATION of the significance of the act of the surgeon in bathing the skin with an antiseptic solution before an operation.
11. The REALIZATION that bathing helps us to get rid of the poisons of fatigue.

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[6] Darlington: Health and Efficiency, p. III.

Counteracting Elements:

1. The REALIZATION that too much bathing—especially in the form of prolonged warm baths—may have a harmful or even fatal effect (to counteract the possibility of harm through habits of excessive bathing).

2. The REALIZATION that swimming in deep water, or bathing in the surf, should be indulged in only under reasonably safe conditions (to counteract the possibility of drowning through cramps, heart attacks, being swept away by the undertow, etc.).

3. The HABIT of swimming or bathing before meals rather than immediately after (to counteract the possible ill-effects of bathing immediately after meals).

4. The REALIZATION that one should "paint the cheeks from the inside" (to counteract excessive use of cosmetics).

Completing Elements:

1. A REALIZATION of the distinction in function between a cold bath and a warm bath.

2. The REALIZATION that the best time to take a warm bath is in the evening before retiring.

3. The REALIZATION that the best time to take a cold bath is in the morning, before breakfast.

4. The REALIZATION that the alternation of hot and cold water probably has a beneficial effect on the arteries.

5. The REALIZATION that a cold bath probably increases the number of corpuscles.[7]

6. An ATTITUDE of desiring to have those facilities for bathing that help to make the bath pleasurable.

7. A REALIZATION of the need of occasional systematic physical examinations as a check-up on the amount or kind of bathing advisable.

8. Desirable HABITS relating to body bathing (tub baths, showers, etc.):

(a) The HABIT of bathing regularly.

(b) The STANDARD of taking at least one warm bath every week.

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[7] Darlington: Health and Efficiency, p. 115.

(c) The HABIT of bathing all of the body or at least the chest, neck and arms with cool water every morning on arising.
(d) The HABIT of gradually turning the water of a warm bath to cold—particularly when under the shower.

9. Desirable HABITS relating to the cleanliness of the face, neck, and ears:
(a) The HABIT of washing those parts of the body every morning on arising.
(b) The HABIT of washing them also in the evening before retiring.
(c) The HABIT of washing them at such other times as may be reasonably desirable.
(d) The HABIT of using a wash cloth (individual, rather than common) and soap.
(e) The HABIT of washing, particularly "behind the ears" and the exposed portion of the ear.
(f) Desirable HABITS relating to the use of the wash cloth:
  (a) The HABIT of using only an individual wash cloth, if possible.
  (b) The HABIT of rinsing it out and of hanging it up to dry after use.

10. The HABIT where possible, of using an individual towel.

11. and 12. The REALIZATION that certain parts of the body need washing more frequently than the rest, and the corresponding HABIT of washing them frequently and carefully in order that they may be kept clean and odorless at all times:
(a) Arm pits
(b) Ano-genital region
(c) Feet[8]

Limiting Elements:

1. The REALIZATION that where a disease, defect or abnormal condition exists, baths should be taken like medicine—only on the advice or under the direction of a physician.

2. The REALIZATION that the temperature and duration of the bath should vary with one's age and condition.

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[8] For further desirable outcomes relating to the care of the feet, see Health Education Complexes C-IX and D-X.

3. The REALIZATION that too much bathing may be as harmful as too little.

Transferring Elements:

1. A SENSING of discomfort when one is prevented from bathing regularly.

2. An ATTITUDE of desiring to be clean—

(a) for social reasons

(b) for hygienic reasons

3. An ATTITUDE of common-sense discrimination in the matter of bathing as frequently as may be

(a) desirable

(b) possible, in view of the condition of one's environment.

A-5. Desirable outcomes relating to the care of the nails (finger and toe).

HEALTH EDUCATION COMPLEX A-III
(Controlling System)

Controlling Outcome:

The HABIT of taking proper care of the nails.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. A REALIZATION of the attractiveness of clean, well trimmed and well polished nails.

2. A REALIZATION of the greater safety of clean nails from the standpoint of practical hygiene, e. g., the possibility of disease germs lodging beneath the nails and from there being transmitted through the mouth or an open wound to the blood-stream.

3. The MOTIVE of desiring the social approval of others (parents, teachers, friends and associates).

4. The REALIZATION that well-kept nails contribute noticeably to the attractiveness of the hand.

Counteracting Elements:

1. The REALIZATION that unclean or ill-kept nails are a discourtesy and an affront to others (to counteract the tendency to be careless of the condition of one's nails).

2. The REALIZATION that unclean nails are potential threats to one's health (to counteract indifference toward the cleanliness of one's nails).

3. The REALIZATION that the nails should be cleaned when the hands are washed—probably "after" rather than before—(to counteract the practice of cleaning nails in street-cars, offices and other public places).

4. The REALIZATION that the nails should not be trimmed too close to the quick (to counteract the possibility of injury to the tender flesh and also a loss of protection to the finger ends).

Completing Elements:

1. The HABIT of

(a) having one's finger nails manicured regularly, or

(b) of manicuring them one's self.

2. Desirable HABITS relating to the care of the finger nails:

(a) The HABIT of cleaning them (or of inspecting them to make sure of their proper condition).
  (a) immediately after washing the hands
  (b) before meals
  (c) before going anywhere (school, church, work, visiting, etc.)
  (d) after any activity of a character that might soil them.

(b) The HABIT of carrying a nail file, or the equivalent, for emergencies, use in private during the day.

(c) The HABIT of brushing the nails with a small nail brush and warm soapy water.

(d) The HABIT of using an orange stick
  (a) to clean out the dirt, etc.
  (b) to push back the cuticle properly (while still soft from the warm water).

(e) The HABIT of using a nail file properly.

(f) The HABIT of trimming the nails before they become too long.

(g) The HABIT of smoothing and rounding the nails properly after they have been trimmed.

3. Desirable OUTCOMES relating to the care of the toe-nails:

(a) The HABIT of cleaning and trimming the toe-nails regularly, preferably just after bath.

(b) The REALIZATION of the causes of "in-growing toe-nail":
  (a) trimming too close to quick at side
  (b) tight shoes, or shoes with narrow toes.
(c) The REALIZATION that it is probably better to trim the toe-nails straight, or almost straight across the toe,—not rounding them too greatly.
(d) The REALIZATION that the toe-nails should not be permitted to grow too long.
(e) The STANDARD of giving the toe-nails proper attention at least once a week.

Limiting Elements:

1. The REALIZATION that special conditions may justify one in getting their nails dirty, but do not justify one in permitting them to remain so.

2. The REALIZATION that should not carry the caring for one's nails to a point where it becomes wasteful of time, an obsession, etc.

Transferring Elements:

1. A SENSING of discomfort caused by one's nails being unclean or poorly kept, if the condition is unjustifiable.

2. An ATTITUDE of desiring to be clean for health's sake—safety of self and others.

3. An ATTITUDE of desiring to be socially acceptable from the standpoint of personal cleanliness.

A-6. Desirable outcomes relating to the cleanliness of, and the care of, the hair.

HEALTH EDUCATION COMPLEX A-IV
(Controlling System)

Controlling Outcomes:

1. The HABIT of brushing the hair regularly and well. (Health Education Complex A-IV. —1.)

2. The HABIT of washing the hair properly. (Health Education Complex A-IV. —2.)

3. The HABIT of having the hair trimmed properly. (Health Education Complex A-IV. —3.)

4. An ATTITUDE of desiring to give proper attention to

abnormal conditions of the hair and scalp. (Health Education Complex A-IV. —4.)

HEALTH EDUCATION COMPLEX A-IV. —1
(Controlling System)

Controlling Outcome:

The HABIT of brushing the hair regularly and well.

ELIMENTS OF THE COMPLEX

Strengthening Elements:

1. COMMON FACTOR: A REALIZATION of the attractiveness of well kept hair.
2. COMMON FACTOR: A REALIZATION of the hygienic value of good hair (protection from weather, blows, etc.).
3. COMMON FACTOR: A REALIZATION of the social and economic values of good, well kept hair.
4. COMMON FACTOR: The REALIZATION that one of the reasons why women have better hair than men is because they take better care of their hair than men.
5. A REALIZATION that brushing the hair well brings out the natural oil in the scalp.

Counteracting Elements:

1. The REALIZATION that a tight hat band tends to interfere with the circulation of the blood, and the proper nourishment of the roots of the hair (to counteract the possibility of baldness loss of hair, etc.).
2. The REALIZATION that unkempt hair is a social and economic handicap (to counteract carelessness as to condition of the hair).
3. The REALIZATION that "grease" used for combing and fixing[9] the hair in place is probably not desirable, from the standpoint of the health of the hair (to counteract the ill-effects of use of grease, oils, etc.).
4. The REALIZATION that one should not use a comb with sharp teeth (to counteract the possibility of injury to the scalp.

Completing Elements:

1. The HABIT of taking proper care of the comb and brush.

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[9] Tends to eliminate the good effects which come from stiff brushing to bring out the natural oil in the hair.

SUB-CONTRIBUTORY COMPLEX

Strengthening Elements:

1. The REALIZATION that a good brush and a clean comb are vital to the health of the hair and scalp.

Counteracting Elements:

1. The REALIZATION that the use of a common brush and comb is a violation of good health practice (to counteract the habit of using a common comb and brush).

2. The REALIZATION that a brush should not be used after its bristles have become flattened (to counteract the using of brushes whose bristles have no stimulating values).

Completing Elements:

1. The REALIZATION that warm water and soap for cleaning the brush and comb is better than cold water and soap.

2. The REALIZATION that brushes and combs of different colors, shapes, and materials should be procured for use by different members of the same household.

3. An ATTITUDE of desiring to patronize only those barber shops under adequate sanitary supervision.

4. The REALIZATION that good bristles—stiff and lasting—are found only in the more expensive brushes.

Limiting Elements:

1. The REALIZATION that by "proper care" we mean that one's brush and comb should be cleaned regularly, at least once every two weeks.

Transferring Elements:

1. The HABIT of using a good individual brush and comb.

2. The HABIT of cleaning them regularly and frequently.

Completing Elements:

2. The STANDARD of brushing the hair as a necessary part of the toilet, on arising, before meals, before retiring, before going out.

3. The HABIT of practicing discrimination as to whenever else it may be necessary to brush the hair.

4. The REALIZATION that men should use a comb with short teeth and that women should use a comb with long teeth.

5. The REALIZATION that men should use a brush with

short bristles and that women should use a brush with long bristles, not too stiff.

6. The REALIZATION that one should brush with firm although not violent strokes, so that the scalp is stimulated.

7. REALIZE that brushing the hair well, is to be preferred to "adding oil" to the hair.

Limiting Elements:

1. The REALIZATION that gray hair is often a hereditary characteristic, and hence probably beyond control.

2. The REALIZATION that the lustre and growth of the hair depends not only on the "Care of the Hair," but on the general condition of the whole body.

3. The REALIZATION that daily swimming and bathing may justify the use of oil on the hair to counteract dryness of the scalp.

Transferring Elements:

1. A SENSE of satisfaction, physical and mental, in having well brushed hair.

2. A REALIZATION of the social value of well brushed hair.

HEALTH EDUCATION COMPLEX A-IV. —2
(Controlling System)

Controlling Outcome:

The HABIT of washing the hair properly.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. See COMMON FACTORS 1., 2., 3., 4. Complex A-IV.—1
2.
3.
4.

Counteracting Elements:

1. The REALIZATION that a dry "scalp" and "brittle" hair should not be washed as frequently as hair and scalp in normal condition (to counteract ill-effects of excessive washing of the hair).

Completing Elements:

1. The HABIT of washing the hair every day, if the hair is short, and easily dried.

2. The REALIZATION that the most convenient and healthful means of washing the hair are probably (arranged in order of value)

(a) Shower bath
(b) Hand Spray
(c) Basin and wash cloth

3. The HABIT of using warm water and pure (vegetable oil, preferred) soap.

4. The HABIT of rinsing the hair in cool water.

5. The HABIT of drying the hair thoroughly, especially in the winter time.

6. The HABIT of drying the hair in the sun when possible (for girls and women).

7. The REALIZATION that daily swimming without the use of a bathing cap will result in a depletion of the natural oil of the hair and scalp.

8. The REALIZATION that salt water bathing is injurious to the hair (if unprotected).

9. The REALIZATION of the value of occasional shampoos. The frequently depending on individual physical conditions, daily activities, etc.

10. The HABIT of wearing a rubber cap when bathing.

11. The REALIZATION that impurities in the hair consist largely of dust and dirt from the air and waste from the scalp.

Limiting Elements:

1. The REALIZATION that one should not bathe the hair, nor wash it too frequently.

2. The REALIZATION that if the hair is washed frequently (e. g. under a strong shower bath daily) that soap should not always be used, as it tends to remove too much oil.

3. The REALIZATION that the length of the desirable intervals between washing of the hair depends on variable factors:

(a) Length of hair
(b) Condition of hair and scalp—ranging from daily bath to once a month.[10]

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[10] Williams: Personal Hygiene Applied, p. 291.

Transferring Elements:

1. A SENSE of satisfaction, physical and mental, in having a clean scalp and clean hair.
2. A REALIZATION of the social value of well kept hair.

HEALTH EDUCATION COMPLEX A-IV. —3
(Controlling System)

Controlling Outcome:

The HABIT of having the hair trimmed properly.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. See COMMON FACTORS 1., 2., 3., 4. Complex A-IV. —1
2.
3.
4.
5. The REALIZATION that the hair is easier to comb and to wash if it is properly trimmed.

Counteracting Elements:

1. The REALIZATION that long unkempt hair (especially men and boys) causes physical discomfort, and may obstruct one's vision at a critical time, (to counteract carelessness as to the trimming of the hair.)

Completing Elements:

1. The HABIT of patronizing only sanitary barber shops, where possible.
2. The REALIZATION that there is considerable doubt as to the truth of the prevalent belief that cutting (either clipping, or frequent cutting) tends to increase the growth of the hair.

Limiting Elements:

1. The REALIZATION that while the beard may not be in style, it is used in many places as a protection against severe winter weather, particularly for bloodvessels and nerves in the face, and a certain gland in the neck.

Transferring Elements:

1. A SENSE of physical comfort that comes from having the hair well trimmed.
2. A REALIZATION of the social value of well trimmed hair.

HEALTH EDUCATION COMPLEX A-IV. —4
(Controlling System)

Controlling Outcome:

An ATTITUDE of desiring to give proper attention to abnormal conditions of the hair and scalp.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. See COMMON FACTORS—1., 2., 3., 4. Complex A-IV—1.
2.
3.
4.

Counteracting Elements:

1. The REALIZATION that a scalp massage is helpful in that it aids circulation and exercises the tissues, tending to prevent them from wasting away (to counteract possible conditions of poor nutrition).

2. The REALIZATION that the hand should be washed before being used to wet the hair (to counteract the possibility of infection).

Completing Elements:

1. The STANDARD of keeping the scalp clean, as the essential means of avoiding infection.

2. The STANDARD of wearing a washable, changeable hat lining in cases where a communicable scalp disease exists.

3. The REALIZATION that the tendency to become gray early in life is a hereditary trait.

4. The REALIZATION that while baldness may be due to hereditary factors in some cases, it is frequently due merely to a lack of nourishment and a consequent wasting of the tissue.

5. The ATTITUDE of desiring to avoid pressure on the scalp (hat band, etc.).

6. The REALIZATION that "pressure" is determined not merely by the character of the hat or band, but by the shape of the head, a uniformly round head being more susceptible to uniform and completely encircling pressure.

7. The REALIZATION that the "hat-line" of pressure changes from season to season with women (changing style),

but that in the case of men it is practically unchanging to their probable greater disadvantage.

8. The REALIZATION that dandruff is one of the causes of baldness.

9. The REALIZATION that constant nerve strain or a great nerve shock may
(a) cause a tendency of the hair to fall out, or
(b) cause a tendency of the hair to become gray.

10. The REALIZATION that oil glands may fail to function because of the general condition of the body, or because they are diseased themselves.

11. The REALIZATION that diseases of the system often affect the hair adversely.

12. The HABIT of preserving a balanced diet.

13. The HABIT of washing the hair properly.

Limiting Elements:

1. The REALIZATION that "proper attention" means the attention of a specialist (skin diseases).

2. The REALIZATION that "proper attention" means also the taking of all measures needful to prevent the spread of a contagious disease of the scalp or hair when one is so afflicted.

Transferring Elements:

1. An ATTITUDE of desiring to have normal and healthy scalp and hair.

A-7. Desirable outcomes relating to the cleanliness of, and the care of, the mouth.

HEALTH EDUCATION COMPLEX A-V
(Controlling System)

Controlling Outcome:

The HABIT of taking proper care of the mouth.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The REALIZATION that the mouth affords an ideal

breeding place for the growth and culture of disease germs and bacteria.
(a) warmth
(b) moisture
(c) nourishment

2. The REALIZATION that the mouth is open to the entrance of disease germs, throughout the normal activities of daily life.

3. The REALIZATION that the more deadly type of pneumonia germs are those found in the mouth.

4. A REALIZATION of the fact that forty-eight kinds of bacteria have been found in one mouth, and that with the favorable opportunities for rapid increase, that it is probable that millions of germs find their homes in our mouths.

5. A REALIZATION of the significance of the fact that the surgeon's face (nose and mouth) is covered with gauze during the course of an operation.

6. A REALIZATION of the reason why the practice of lecturing during the course of an operation has been largely abandoned.[11]

Counteracting Elements:

1. An ATTITUDE of disgust toward the habit of biting or chewing of finger-nails as being babyish and dangerous (to counteract the habit indicated).

2. A similar ATTITUDE of disgust toward the habit of sucking of the thumb or finger (to counteract the habit indicated).

3. A REALIZATION that germs may be sprayed into the air by talking, sneezing, and coughing (to counteract the possible spread of disease through the sources indicated).

4. A REALIZATION that it is particularly dangerous and offensive to cough or sneeze on food or drink (to counteract carelessness in sneezing or coughing when at the table, or when preparing food for the table).

5. A REALIZATION that "mouth breathing" gives one an unpleasant facial expression, and causes further physical changes

[11] Darlington, p. 168. Darlington, p. 168.

of detriment to the physical welfare of the individual (to counteract "mouth-breathing").

6. The HABIT of breathing through the nose (to counteract "mouth-breathing").

Completing Elements:

1. The REALIZATION that the dust of the street is a possible source of disease germs (dry expectoration, etc.).

2. A REALIZATION of the many things which the hand comes in contact with during the day (door knobs, hand-rails, toilet seats, money, etc.).

3. The REALIZATION that tonsilitis is probably often caused by decayed teeth and an unclean mouth.

4. The REALIZATION that the most dangerous pneumonia germs are those which are frequently found in the mouth.

5. The REALIZATION that spitting in public places is highly dangerous to others, and that one should expectorate into a toilet where possible, or else into a handkerchief.

6. The REALIZATION that it is probably a wise precaution to rinse the mouth after drinking milk.

7. The REALIZATION that it is probably a good thing to cleanse the mouth before meals as well as after meals.

8. The REALIZATION that foreign objects in the mouth are not only possible means of infection, but also the possible causes of accidents.

9. An ATTITUDE of disgust toward the "trading" of partly-eaten foods (fruits, cake, etc.).

10. The ATTITUDE of wishing to avoid anything that has touched the mouth or lips of others, directly or indirectly (spoons, forks, tooth brushes, etc.).

11. An ATTITUDE of caution toward putting the fingers in the baby's mouth.

12. The REALIZATION that one should not put one's fingers in his mouth to whistle (a practice much beloved of boys).

13. The HABIT of excusing one's self when coughing or sneezing in the presence of others.

14. A REALIZATION of the need of some sanitary substitute for the practice of kissing on the lips.[12]

15. The HABIT of keeping the hands away from the mouth.

16. The HABIT of using a mild anti-septic mouth wash.

17. The REALIZATION that very often an unclean mouth is caused by the presence of unclean teeth, and the consequent HABIT of visiting a dentist once every six months for prophylactic dental treatment.

18. The HABIT of brushing and cleaning the teeth regularly.

19. The ATTITUDE of being on guard against the possibility of putting unclean or contaminated food in one's mouth.

20. The HABIT of keeping foreign objects out of, and away from the mouth (pencils, pen-holders, coins, buttons, etc.).

21. The HABIT of covering the mouth and nose with a handkerchief when coughing or sneezing.

Limiting Elements:

1. The REALIZATION that "proper care" means not only the taking of the needed precautions to keep one's own mouth clean, but also to exercise all proper care to see that the mouths of others are not infected as a result of our own careless acts.

Transferring Elements:

1. An ATTITUDE of disgust toward unclean oral practices.

2. An ATTITUDE of discrimination toward situations involving good or bad oral hygiene.

A-8. Desirable outcomes relating to the cleanliness of, and the care of, the teeth.

HEALTH EDUCATION COMPLEX A-VI
(Controlling System)

Controlling Outcome:

The HABIT of taking proper care of the teeth.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. A REALIZATION of the value of good teeth in eating (well chewed food)—(physical comfort).

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[12] Experimentation particularly desirable.

2. A REALIZATION of the need for good teeth in talking clearly (proper enunciation).

3. A REALIZATION of the place of good teeth in attractive personal appearance; clean white teeth vs. discolored teeth or missing teeth.

4. A REALIZATION of the value of good teeth for general bodily tone and health (principal of focal infection, etc.)

5. The REALIZATION of the economic value of good teeth—(good health—steady work) (good appearance—good job).

6. A REALIZATION that (contrary to certain maxims) "Appearance does count."

Counteracting Elements:

1. The ATTITUDE of being conscious of, and meticulous about the question of one's breath (to counteract "halitosis").

2. The ATTITUDE of being ashamed of discolored or decayed teeth, and an unclean mouth (to counteract habitual carelessness regarding the care of one's teeth).

3. The REALIZATION that bad teeth or bad breath indicate a certain laxity in personal health standards (to counteract carelessness, etc.).

4. An ATTITUDE of repugnance toward:
(a) false teeth
(b) the "gold tooth" to counteract:
(a) carelessness toward life of the natural teeth, and
(b) the unesthetic placing of gold crown on front teeth.

5. A REALIZATION that the "candy mouth" and the "sweet tooth" hasten dental decay (to counteract the excessive use of candy and sweets).

Completing Elements:

1. The REALIZATION that the most important time for brushing the teeth is before retiring.

2. The HABIT of using an individual tooth brush (avoid "common" use).

3. STANDARDS for proper care of brush—
(a) wash after use, clean place, no dust
(b) sunlight if possible.

4. STANDARDS of proper sequence relating to the cleaning of the teeth:
(a) clean nails and wash face
(b) dental floss or pick
(c) brush teeth
(d) mouth wash
(e) rinse hands and dry them.

5. A REALIZATION that "a polished surface seldom decays."

6. The REALIZATION that clean teeth seldom decays.

7. The REALIZATION that with proper care our teeth should last a life time.

8. STANDARDS for good Tooth Brush
(a) good bristles
(b) uneven better (get between teeth).

9. A REALIZATION that an infected tooth may affect the bones of the face and spread to the eye or the ear.

10. A REALIZATION that focal infection of root of teeth, abscesses may spread through the lymph vessels or the circulation of the blood to remote parts of the body.

11. A REALIZATION that the most common locations of "focal infections" are the teeth (and tonsils).

12. A REALIZATION that even when not the primary cause, "focal infection" may prolong or intensify a disease.

13. The REALIZATION that all filled or crowned "devitalized" teeth are regarded with suspicion by the medical profession as possible, or probable, sources of focal infection.

14. Proper HABITS of brushing the teeth e. g., before breakfast, after meals, before retiring.

15. HABITUAL practice in brushing the teeth: tooth brush drills.
(a) specific surfaces
(b) effective handling of the brush
(c) light quick stroke
(d) rotary motion.

16. The HABIT of removing food particles that the brush cannot reach by use of dental floss, or soft quills.

17. A REALIZATION of the need for proper care of the milk teeth.

18. The HABIT of massaging the gums after brushing the teeth.

19. The HABIT of using the requisite accessories; brush, clean water, powder or paste, round pick or quill, dental floss, mouth wash.

20. The STANDARD of going to the dentist for examination and treatment, once every six months.

Limiting Elements:

1. The REALIZATION that brushing alone will not preserve the teeth but that

(a) bond building foods, and

(b) "exercising" (hard or rough) foods are also necessary for the proper care of the teeth.

2. The REALIZATION that while one should endeavor to save his teeth as long as possible, decayed or infected teeth should be removed (their presence may do more harm than good).

Transferring Elements:

1. The REALIZATION that one's general health may be dependent upon the care taken of the teeth.

2. An ATTITUDE of desiring to conserve or save the teeth at all times.

A-9 and 10. Desirable outcomes relating to the cleanliness of and the care of the nose and throat.

HEALTH EDUCATION COMPLEX A-VII
(Controlling System)

Controlling Outcome:

The HABIT of taking proper care of the nose and throat.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The REALIZATION that keeping the nose clean helps us to

(a) breathe properly

(b) speak clearly.

2. The REALIZATION that cleaning the nose probably helps to keep disease germs out of the respiratory tract

3. The REALIZATION that the nose (not the mouth) is the natural organ of breathing, and that it is a natural "air

filter" (mouth is not). The nose prepares air for the lungs, moistens, warms, filters the air; the mouth prepares food for digestion.

4. The REALIZATION that coughing and sneezing constitute the principal modes of transmitting disease, particularly of the respiratory tract.

5. The REALIZATION that coughing or sneezing aloud is discourteous to others (in many ways).

6. The REALIZATION that mouth breathing is a handicap:
(a) Physical Handicap.
(b) Social Handicap.
(c) Educational Handicap.

7. The REALIZATION that diseases of infections of the throat often affect the ear, and perhaps ultimately the brain, causing deafness, serious illness or death.

Counteracting Elements:

1. The REALIZATION that a dirty handkerchief is displeasing to sight of others (counteract the using of a soiled handkerchief).

2. A REALIZATION that it is a discourtesy to others to clear nose at table (touch handkerchief lightly to nose instead) —(to counteract unhygienic and unaesthetic practice indicated).

3. The REALIZATION that picking at the nose is disgusting and sometimes dangerous (to counteract the habit of picking at the nose).

4. A REALIZATION that waste matter from nose or throat should not be swallowed (to counteract the tendency indicated).

5. The REALIZATION that breathing through the mouth causes drying up of the mucous of the throat, and is a frequent cause of coughing and sore throat, providing a foothold for cold and infectious diseases (to counteract the Habit of breathing through the mouth).

Completing Elements:

1. The HABIT of cleaning the respiratory tract every morning on arising.

2. The HABIT of cleaning the respiratory tract every night before retiring.

3. The HABIT of cleaning the respiratory tract quietly and in private, when possible.

4. The HABIT of discarding soiled handkerchiefs as soon as possible (later to be boiled).

5. The HABIT of excusing one's self when coughing or sneezing.

6. The HABIT of turning head aside when blowing the nose or sneezing, and of excusing one's self when so doing.

7. An ATTITUDE of desiring to stay away from close proximity to others when one has a bad cold.

8. The HABIT of emitting waste matter from nose or throat into handkerchief or toilet.

9. An ATTITUDE of desiring to avoid sneezing, or coughing on food or drink (in preparation for the table, or on the table).

10. The HABIT of keeping fingers and foreign substances away from nose.

11. The REALIZATION that inflammation ("sore throat") of the throat should be given prompt medical attention as it is often the symptom of the serious infectious disease.

12. The HABIT of keeping the mouth closed when breathing whenever possible.

13. The HABIT of using a clean handkerchief properly when
(a) sneezing
(b) coughing
(c) cleaning the nose.

14. The HABIT of carrying a clean handkerchief (and if possible, a "spare") at all times.

15. The HABIT of carrying additional handkerchiefs, if one has a cold or chronic catarrh.

16. The HABIT of taking advantage immediately of the natural warning that generally precedes the sneeze or cough.

17. The HABIT of covering the finger with a handkerchief whenever it is used in removing an obstructon in the nasal passage.

Limiting Elements:

1. The REALIZATION that "proper care" means that the nose should be blown not too hard, and preferably one side at a time.

2. The REALIZATION that handkerchief should be used before one sneezes or coughs (not afterward).

3. The REALIZATION that "proper care" means to get prompt medical attention
(a) for colds and diseases of respiratory tract, infected tonsils, etc.
(b) for nasal obstruction.
Transferring Elements:
1. An ATTITUDE of respect for the rights of others (as related to sneezing, coughing, etc., in public).
2. An ATTITUDE of desiring to protect one's general health by taking the best possible care of one's nose and throat.
3. VOCABULARY CONTROL:
(a) an understanding of, or
(b) the intelligent use of certain terms related to the physiology and hygiene of the nose and throat.

A-11. Desirable outcomes relating to the cleanliness of, and the care of, one's clothing.

HEALTH EDUCATION COMPLEX A-VIII
(Controlling System)

Controlling Outcome:
The HABIT of taking proper care of one's clothing.

ELEMENTS OF THE COMPLEX

Strengthening Elements:
1. The REALIZATION that clothing has an intimate relationship to one's person—(it is in a sense a kind of added, artificial skin), and that because of this fact, the HABIT of wearing clean clothing is closely related to personal cleanliness.
2. The REALIZATION that clean clothing is an economic asset.
3. The REALIZATION that clean clothing is a social asset.
4. The REALIZATION that the condition of one's clothing (rather than its cost) is regarded by many as indicative of mental traits or characteristics.
Counteracting Elements:
(to counteract carelessness or indifference toward the condition of one's clothing.)
1. The REALIZATION that "appearance does count."

2. The SENSING of discomfort in unclean clothes (unless justified).

3. A REALIZATION that one should not play, or at least, not too hard, when dressed in one's best suit (or when not dressed appropriately).

Completing Elements:

1. The HABIT of providing several changes of clothing, (both outer and under) to insure the ability to change frequently.

2. The HABIT of wearing, when possible, "special clothes" for work or play.

3. The HABIT of dressing appropriately for a given occasion or activity.

4. The HABIT of changing completely (to night clothes) before retiring.

5. The HABIT of having suits and outer clothing cleaned and pressed frequently.

6. The HABIT of properly storing away winter clothing during the summer.

7. The HABIT of properly storing away summer clothing during the winter.

8. The HABIT of keeping shoes in "shoe trees" when not in use.

9. The HABIT of keeping rubber goods in a dry place, but not hot.

10. The HABIT of hanging outer clothing on "hangers" when not in use.

11. The HABIT of "airing" bed clothing every day.

12. The HABIT of changing bed clothing frequently.

13. The HABIT of changing underclothing frequently.

14. The HABIT of changing underclothing after play.

15. The HABIT of changing underclothing more frequently in winter than in summer.

16. The HABIT of wearing clean underclothing only.

17. The HABIT of hanging underclothing up to air at night.

18. The HABIT of wearing clean night clothes only.

19. The HABIT of hanging up night clothing after changing in the morning—"off the floor"—airing it.

20. The HABIT of wearing a clean collar each day.

21. The HABIT of a waist or a shirt when it is soiled—particularly at the cuff.

22. The HABIT of wearing clean outer clothing only.

23. The HABIT of wearing neatly pressed outer clothing only.

24. The HABIT of airing outer clothing when not in use.

25. The HABIT of removing wet clothing as promptly as possible.

Limiting Elements:

1. The REALIZATION that one should not be ashamed to get one's clothing soiled for a worthy cause—or to wear old or soiled clothing for a worthwhile purpose.

2. The REALIZATION that while one should not be extravagant in spending money on clothes, one should spend at least enough to insure the purchase of goods of lasting quality.

Transferring Elements:

1. An ATTITUDE of respect—not merely for new or costly clothes—but for old clothes as well, if it is evident that an attempt has been made to keep them clean.

2. An ATTITUDE of looking for the qualities of character revealed in the selection and care of clothes by the wearer, instead of judging the wearer by the expensiveness of clothing alone.

3. An ATTITUDE common sense discrimination in the selection, care and wearing of clothes appropriate for varying situations or conditions.

OBJECTIVE B.

The Control of Environmental Cleanliness

This includes all desirable Controlling Outcomes relating to clean and healthful:

HEALTH EDUCATION COMPLEX

1. Schools.....B-I
2. Homes.....B-II
3. Communities.....B-III

B-1. Desirable Outcomes relating to clean and healthful schools.

Health Education Complex B-I
(Controlling System)

Controlling Outcome:

An ATTITUDE of desiring to have a clean and healthful school:

Elements of the Complex

Strengthening Elements:

1. The REALIZATION that for the pupil the school is his home for a large proportion of his daily existence.
2. The ATTITUDE of being willing to make adequate personal sacrifices to help to secure clean and healthful school conditions.
3. The ATTITUDE of taking personal pride in the cleanliness and healthfulness of one's environment.
4. The MOTIVE of desiring to please the principal, the teacher, and the school custodian.
5. The MOTIVE (incentive) of desiring to have a school room (school plant, etc.), that compares favorably with, or excels that of other groups of pupils (competitive instinct).

Counteracting Elements:

1. The REALIZATION that an offender against the rules intended to secure clean conditions in school is offending his classmates as well as the school authorities (to counteract certain bad habits—throwing paper on the floor, writing on the walls, making the toilets unclean, etc.).
2. The MOTIVE of desiring to secure the good-will and approval of one's classmates (to counteract, etc.—see 1 above).
3. The HABIT of making use of the proper receptables for trash, waste-paper, uneaten lunch, etc. (to counteract littering of the classroom, school yard, school toilet, etc., and the unhygienic practice of leaving such accumulations beneath the desk.
4. The HABIT of expectorating (when necessary) in the toilet rather than in the fire-escape or school yard (to counteract the undesirable practices indicated).

Completing Elements:

1. A SENSING of disquiet with any unclean or unhealthful school condition, and an ATTITUDE of being willing to call the attention of the responsible authority to that condition.

2. The REALIZATION that it is not possible for the school to be clean and healthful without the active co-operation of the pupils.

3. The REALIZATION that it is impossible to keep our persons neat and clean if our surrounding conditions are not kept neat and clean also.

4. The ATTITUDE of desiring to give such co-operation in whatever directions it may be required.

5. An ATTITUDE of desiring to have a clean and healthful lunch room.

6. An ATTITUDE of desiring to respect and to help enforce the regulations regarding proper periods of exclusion of school-pupils, to prevent the spread of any contagious disease.

7. An ATTITUDE of cheerfully submitted to health inspection by the teacher, nurse, or school medical inspector for either routine or special examination.

8. The HABIT of keeping one's desk clean.

9. The HABIT of properly disposing of umbrellas, rubbers, rain-coats, etc., in inclement weather.

10. The HABIT of using the door-mat properly.

11. The HABIT of making proper use of the school toilet facilities and an ATTITUDE of expecting the same from others.

12. The HABIT of keeping the school bus clean.

Limiting Elements:

1. The REALIZATION that the time given to keeping the school environment clean should be given economically and efficiently, that time should not be wasted with a resulting loss of instruction, etc.

Transferring Elements:

1. The ATTITUDE of desiring a clean and healthful environment wherever one may go.

2. The ATTITUDE of feeling a personal responsibility for the cleanliness of one's immediate environment whenever that may be.

(a) School—rotating schedules, different desks, different rooms, varied activities, etc.

(b) Elsewhere—at home, camping, at play, visiting, etc.

3. An ATTITUDE of disgust and indignation toward spitting in any public place.

B-2. Desirable Outcomes relating to clean and healthful homes.

HEALTH EDUCATION COMPLEX B-II
(Controlling System)

Controlling Outcome:

An ATTITUDE of desiring to have a clean and healthful home.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The REALIZATION that unclean home conditions—unsanitary practices, etc., often lead to serious illness, with consequent disturbance of, and inconvenience in, the family routine; mental anguish and distress; economic loss, etc.
2. The MOTIVE of desiring to please one's parents or elders, or of setting a good example to younger members of the group.
3. A REALIZATION that disease germs often flourish in unclean places.

Counteracting Elements:

1. The REALIZATION that unsanitary conditions and practices in the home may endanger the health of others in the group (to counteract careless habits in the matter of home hygiene).

Completing Elements:

1. The REALIZATION that, in the ordinary home, the various members of the family group must co-operate to keep things neat and clean.
2. The REALIZATION that it is almost impossible to keep one's person neat and clean in a home that is not clean.
3. An ATTITUDE of desiring to have "a place for everything and everything in its place."
4. An ATTITUDE of desiring to have a home located in a healthful environment.
5. An ATTITUDE of desiring to eliminate flies, mosquitoes, vermin, rodents and other household pests.

6. A REALIZATION of the indesirability of dust when cleaning, and of methods of avoiding or reducing the amount of it.

7. The HABIT of keeping the back yard, and "alley" clean.

8. The HABIT of keeping the pavement clean.

9. The HABIT of keeping the cellar (basement) clean.

10. The HABIT of keeping the lid on the garbage can.

11. The HABIT of using the door-mat, before entering when necessary.

12. The HABIT of keeping the screen door closed.

13. The HABIT of properly disposing of garbage, sewage, trash and other household wastes.

14. The ATTITUDE of desiring to provide fresh air (through ventilation) and, where possible, sunshine for all rooms of the house, particularly cellars and basements.

15. The STANDARD of having all parts of the house cleaned and aired regularly.

16. The REALIZATION that small articles are "dust catchers."

17. The REALIZATION that clothes not in use should be hung up or folded properly, and put away.

18. The REALIZATION that bed-clothes and bed-rooms should be aired daily—preferably just after arising.

19. An ATTITUDE of desiring to have a clean and sanitary bathroom, with proper provision for:

1. Individual combs, brushes, etc.
2. Individual towels and wash cloths.

20. The HABIT of taking proper care of all toilet articles and facilities.

21. The ATTITUDE of desiring to have clean and sanitary kitchens and dining rooms.

22. A REALIZATION of the practical hygienic value of scalding dishes and other food utensils and receptacles when cleaning them.

23. A REALIZATION of the ways and means of protective food from contamination and spoilage.

24. A REALIZATION of the need of a well lighted home.

25. A REALIZTTION of the need of a properly heated home (in winter)

26. A REALIZATION of the need of a well ventilated home.

27. A REALIZATION of the value of a home in a neighborhood conducive to good conditions for sleep and rest.

Limiting Elements:

1. The REALIZATION that while one must try to adjust himself to certain standards of cleanliness and healthfulness in the home, one must also, at times, make certain adaptations of these standards—modifications subject to economic conditions and pressure, type of home, number in family, locality in which the home is situated, etc.

Transferring Elements:

1. STANDARDS for the healthful location of the home.
2. STANDARDS for cleanliness within the home.
3. An ATTITUDE of personal (individual) responsibility for clean conditions within the home.
4. An ATTITUDE of being willing to make personal sacrifices for the sake of the cleanliness and healthfulness of one's home.
5. An ATTITUDE of pride in one's home.

B-3. Desirable Outcomes relating to clean and healthful communities.

HEALTH EDUCATION COMPLEX B-III
(Controlling System)

Controlling Outcome:

The ATTITUDE of desiring to have a clean and healthful community.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The REALIZATION that the state of one's health very often depends on the acts of others.

2. The REALIZATION that this condition is reciprocal and the consequent REALIZATION of the necessity for community co-operation in all matters pertaining to health, in order to insure one's own comfort, safety, and happiness.

3. The REALIZATION that each one has some personal interest in, and responsibility for, the correction of any noticeable unsanitary or unhealthful conditions that may exist in the community.

Counteracting Elements:

1. A REALIZATION of the need for proper care and prompt disposal of garbage, and other household wastes (to counteract filthy alleys, unclean streets, etc.

2. An ATTITUDE of desiring to co-operate in every way in the enforcement (against self or others) of the regulations for the control of contagious diseases (to counteract violation of quarantine restrictions).

3. An ATTITUDE of being willing to follow the suggestion of local health officers in times of epidemics—particularly new diseases, or new forms of old diseases (to counteract the spread of epidemics of this character.

4. An ATTITUDE of being unwilling to use a public (common) drinking cup (to counteract the spread of contagious diseases).

5. An ATTITUDE of desiring to be considerate of the rights of others to undisturbed sleep at night, and the avoidance of any unnecessary noise particularly at night (to counteract the noise nuisance common to urban communities).

6. A REALIZATION of the undesirability of smoke and gases in the atmosphere, and of the need of regulation of sources of the same (to counteract the smoke nuisance).

7. The HABIT of expectorating only in toilets, sewers, or one's own handkerchief (to counteract the evil of public spitting).

8. An ATTITUDE of being unwilling to pollute the waters of a stream, particularly if it may be used by others for securing drinking water (to counteract pollution of streams).

Completing Elements:

1. The REALIZATION that a clean and well kept home contributes its share toward the protection of the members of the whole community.

2. The REALIZATION that a clean and healthful school contributes its share toward the protection of the other members of the community.

3. A REALIZATION of the value of and need for public containers for waste-papers, fruit, etc.

4. The REALIZATION that in time of epidemics, public congregations, particularly indoors, are to be avoided.

5. A REALIZATION of the need of safeguarding our food supply—effective inspection of markets, dairies, bakeries, ice cream plants, canning factories, slaughter-houses, cold-storage warehouses, etc.

6. A REALIZATION of the need of safeguarding our water supply by filtration and the efficient disposal of waste.

7. A REALIZATION of the need for inspection and regulation of building construction in order to safeguard the public health (e. g. ventilation) and safety.

8. The REALIZATION of the need for effective public regulation of the sale of tobacco, alcohol, and drugs.

9. The REALIZATION of the need for effective public regulation of the hours of work and the conditions under which work is done (child labor laws, employment of women, factory inspection, regulations governing hours, sanitation, safety devices, lunch periods, etc.).

10. A REALIZATION of the need of provision for certain types of public health service (in some cases free)—doctors, nurses, ambulances, hospitals, clinics, and asylums.

11. The REALIZATION that when the purity of the water supply is doubtful, it is both possible and advisable, to secure a chemical and a bacteriological analysis of the water.

12. An ATTITUDE of respect for public toilets.

13. An ATTITUDE of courteous consideration toward others, on the street, in public conveyances, public gatherings, etc.

14. The HABIT of patronizing only those food stores that are sanitary in their care and protection of food.

15. STANDARDS of health and cleanliness for places of work or business.

(a) factories and industrial plants

(b) stores and other establishments

(c) offices.

16. STANDARDS of health and cleanliness for churches.

17. STANDARDS of health and cleanliness for club houses, etc.

18. STANDARDS of health and cleanliness for places of amusements (theatres, "movies," etc.).

19. STANDARDS of health and cleanliness for public buildings.

20. STANDARDS of health and cleanliness for playgrounds and recreation centers.

21. STANDARDS of health and cleanliness for camps and camping grounds.

22. STANDARDS of health and cleanliness for public parks and resorts.

23. STANDARDS of health and cleanliness for picnics and picnic grounds.

24. STANDARDS of health and cleanliness for street cars.

25. STANDARDS of health and cleanliness for railroad trains.

26. STANDARDS of health and cleanliness for hotels.

27. STANDARDS for health and cleanliness of boats and other common carriers.

Limiting Elements:

1. The REALIZATION that education is better than coercion or mere regulation for securing a co-operative attitude on the part of citizens.

Transferring Elements:

1. An ATTITUDE of respect for the rights of others.

2. An ATTITUDE of respect for law, order, and constituted authority.

3. An ATTITUDE of being willing to assume the obligations as well as the rights of Citizenship, together with a REALIZATION of what those obligations involve.

4. An ATTITUDE of respect for the constituted authorities that work for the public health—local, state, and national.

5. An ATTITUDE of approval for, and of desiring to participate in, drives and campaigns related to the public health.

OBJECTIVE C

The Control of the Normal Functioning of Certain Parts of the Body

This includes all desirable Controlling Outcomes relating to the care of:

HEALTH EDUCATION COMPLEX:

1. Organs of the Special Senses:
   - (a) Eye.....C-I-a (1 to 9)
   - (b) Ear.....C-I-b
   - (c) Mouth (See A-7)
   - (d) Nose and Throat (See A-9 and 10)
2. The Circulatory System.....C-II
3. The Digestive System.....C-III
4. The Respiratory System.....C-IV
5. The Excretory Systems.....C-V
6. The Nervous System.....C-VI
7. The Reproductive System.....C-VII
8. The Muscular System.....C-VIII
9. The Skeletal System.....C-IX
10. The Glandular (Endocrine) System.....C-X

C-I-a. Desirable outcomes relating to the care of the eye.

Controlling Outcomes:

1. The HABIT of reading in a good light. (Health Education Complex C-1-a-1).
2. The HABIT of avoiding contact of the eye with things that may be unclean (Health Education Complex C-1-a-2).
3. The HABIT of holding print (work) at the proper distance from the eye. (Health Education Complex C-1-a-3).
4. The HABIT of reading (working) only when properly situated (position or location). (Health Education Complex C-1-a-4).
5. The HABIT of giving the eyes proper attention when they feel sore or tired. (Health Education Complex C-1-a-5).
6. The HABIT of wearing glasses regularly if they have been properly prescribed. (Health Education Complex C-1-a-6).

7. A REALIZATION of the sympathetic relationship existing between the eye and other parts of the body. (Health Education Complex C-1-a-7).

8. A REALIZATION of the importance of good eyesight. (Health Education Complex C-1-a-8).

9. The HABIT of taking proper precautions to avoid accidents to the eye. (Health Education Complex C-1-a-9).

Health Education Complex C-I-a-1
(Controlling System)

Controlling Outcome:

The HABIT of reading in a good light.

Elements of the Complex

Strengthening Elements:

1. REALIZATION of the delicacy of the mechanism of the eye (tiny muscles controlling the size of the pupil).

2. REALIZATION that "poor light" conditions entail abnormal adjustment and consequent strain on these tiny muscles.

3. REALIZATIONS relating to the value of good eyesight (Complex C-1-a-8).

Counteracting Elements:

1. REALIZATION that while one may have good vision, this will not continue to be the case unless existing habits of reading in a poor light are overcome; that good eyesight as well as poor eyesight may be injured by abuse (to counteract careless or abusive treatment of the eyes).

2. The HABIT of wearing colored lenses or smoked glasses in order to protect the eye from especially harmful light conditions that may exist in one's environment, e. g., drops in eyes, extremely bright or strong light, etc. (to counteract harmful effects of conditions conducive to strain).

3. The HABIT of practicing discrimination in regard to the selection of such situations (to counter-act the harmful effects of having unconsciously subjected the eyes to conditions causing strain).

Completing Elements:

1. The REALIZATION that special conditions may easily convert normal light and sunshine into an abnormal and undesirable influence, e. g.

SUB-CONTRIBUTORY ELEMENTS

(a) The *realization* that a slightly tinted page or paper is probably to be preferred to an absolutely white one.
(b) The *realization* that rough paper is better than smooth paper for the purposes of writing or reading, owing to its lack of lustre or "shine."
(c) The *realization* that an undesirable "glare" results from sunlight shining on paper, book or other types of close work.
(d) The *realization* that "glare" also results from the refraction of the light from snow, ice, water, sand, asphalt, concrete.

2. A REALIZATION that the light should be steady, rather than intermittent or flickering, e. g.,
(a) Intermittent light and shadow on the printed page when riding in a trolley car or train.
(b) The unsteady light that comes from an unclean wick, or the flicker of flames (Abraham Lincoln reading by the fireside).

3. A REALIZATION that babies' eyes need more shielding than adults (the color of the iris, which is partly protective, not being fully developed at birth).

4. A REALIZATION that temporary blindness (or "dark spots"—partial blindness) results from looking into too bright a light, e. g., the sun, molten metal, etc.

5. A REALIZATION that in order to obtain good light when reading or working, the light should preferably come over the left shoulder so that the right hand does not throw a shadow over the work; or (to express it in another way) we should sit or stand with the face partly turned from the light taking precautions to see that the work, (or printed page) is not thrown into the shadow.

6. A REALIZATION that a standard for judging light is the way it helps one to see the thing at which one may be looking.

A well shaded lamp may light the room dimly but it may afford an excellent *local* light for working or reading.

7. A REALIZATION of the favorable or unfavorable properties of various kinds of artificial light—oil lamp, gas, electricity, together with precautions to be observed with the use of each.

8. A REALIZATION of the application of these outcomes to conditions of light prevailing at the time of doing one's homework, school work, daily tasks.

9. A REALIZATION that the gradual and imperceptible approach of twilight plus an engrossing book or a highly interesting (or important) task constitutes a frequently recurring situation of insidious menace to the welfare of the eye.

10. A REALIZATION that wall paper, paint (color), window shades, draperies, carpets and rugs, in fact all interior decorations, modify indoor light conditions.

11. A REALIZATION that the amount of light entering through doors and windows (e. g., "light" house or room, "dark" house or room) should indicate to some extent the desirable tones or shades of color in the matter of interior furnishing and decoration.

12. A REALIZATION that window shades are not only for decorative effect but are the practical means of regulating light conditions within the house.

13. A REALIZATION that window shades should be changed or adjusted to meet varying conditions of light brought about by weather conditions or changes in season.

14. A REALIZATION that one's favorites seat or location for reading, study or work should be selected with a view to the conditions of light, afforded, both natural and artificial.

15. A REALIZATION that daylight is better than any artificial light and a consequent *Attitude* of desiring to use it whenever possible, in preference to any other kind of light.

16. A REALIZATION that reading in trains or cars, at night, is generally harmful because of the dimness or of the unsteadiness of the light.

17. A REALIZATION that too sudden a change from total darkness to a bright light (or vice versa) is harmful—as for instance switching on *all* of the electric light in a room at once.

18. A REALIZATION of the value of a number of lamps or fixtures in a room rather than one single powerful central light (or lamp).

19. A REALIZATION of psychological effects of harmony in color or of the cheerfulness in color tone on mental health. (Some people are peculiarly susceptible to unharmonious colors, gloomy or bright rooms, etc.).

20. A REALIZATION of the social obligation to others of providing good conditions for eyes of others in the matter of light (offices, industry, schools, homes).

21. A REALIZATION that globes and lamp chimneys should not be permitted to remain cloudy, dirty, or smoky.

22. A REALIZATION that when one is working facing a window an eye shade should be worn to shut out some of the light and to relieve the eye of the strain incident to a continual struggle between the muscle of the iris to contract the pupil, and the need of the work for having it open.

Limiting Elements:

1. The REALIZATION that "good" light means not only enough light but also "not too much" light.

2. The REALIZATION that one should not expose one's self to some other health danger for the sake of good light (e. g., sitting in a draft by an open window).

Transferring and Interconnecting Elements:

1. An ATTITUDE of intelligent introspection regarding the condition of one's eyesight.

2. An ATTITUDE of conscious observation of the conditions of light to which one's eye may be subjected.

3. VOCABULARY CONTROL:

(a) An understanding of, or

(b) An ability to use intelligently, certain terms related to the physiology and hygiene of the eye.

Health Education Complex C-I-a-2
(Controlling System)

Controlling Outcome:

The HABIT of avoiding contact of the eye with things that may be unclean.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The REALIZATION that the mucous and membraneous tissue of the eye is vulnerable to infection somewhat like an open wound.

2. STANDARDS for prevention of transmission of disease (avoiding common use of clothing, handkerchiefs, towels, etc.).

3. A REALIZATION that the exposed location of the eye and the delicacy of its tissue (membraneous and mucous) render it exceedingly open to attack by certain disease germs or infection.

4. REALIZATIONS relating to the value of good eyesight (Complex C-I-a-8).

Counteracting Elements:

1. The REALIZATION that "rubbing" the eye has a tendency to increase the extent of the injury or inflammation, rather than to cure it (to counteract the tendency to "rub the eye").

2. The REALIZATION that dirty hands, towels or handkerchiefs may be sources of infection or disease and should not be allowed to touch the eye (to counteract the possible contacts indicated).

3. The REALIZATION that even a hand that appears to be clean may have disease germs on it—(experimentation has shown the presence of disease germs on hands that have just been washed in soap and water) (to counteract "rubbing," etc.).

4. The REALIZATION that it is better to rest the eyes than to rub them (to counteract the tendency to "rub" the eyes).

5. The REALIZATION that it is better to bathe the eyes with warm water than to rub them (to counteract the tendency to rub the eyes).

6. The REALIZATION that a proper cleaning of the corners of the eye in the morning will reduce the cause or need for rubbing (to counteract the need or cause, for rubbing the eyes).

Completing Elements:

1. The REALIZATION that many of the diseases of the

eye are transmitted through the common (mutual) use of unclean towels, wash cloths, and handkerchiefs.

2. A REALIZATION of the significance of the restriction placed by the U. S. Government on the immigration of natives of other countries afflicted with certain diseases of the eye.

3. The REALIZATION that flies may infect the eyes of one who is asleep—particularly babies, who sleep so much during the day.

4. The HABIT of using individual wash cloths and towels at home.

5. STANDARDS for the use of wash cloth, towel and handkerchief

(a) Individual use

(b) Boiling where disease exists.

6. The HABIT of cleaning the corners of the eyes each morning using clean water and one's own wash cloth.

7. The HABIT of providing one's self with a soft clean handkerchief each day, if possible.

8. STANDARDS for proper procedure for treatment of foreign substances in the eye.

Limiting Elements:

1. The REALIZATION that the eyes should not be rubbed under the guise of bathing them. A soft cloth or pad of absorbent cotton should be used and applied gently after being dipped into clear warm water.

2. The REALIZATION that the eye should not be rubbed at all, with anything clean or unclean.

Transferring and Interconnecting Elements:

1. The REALIZATION that the instinct to rub the eye is often a symptom of need of medical attention.

2. An ATTITUDE of intelligent introspection regarding the condition of one's eyesight.

3. An ATTITUDE of desiring regular periodic examination of the eyes if one has defective vision.

4. An ATTITUDE of desiring to avoid the services of quacks and fakers and to secure the services of an eye specialist, if possible.

5. VOCABULARY CONTROL:
(a) An understanding of, or
(b) An ability to use intelligently, certain terms related to the physiology and hygiene of the eye.

Health Education Complex C-I-a-3
(Controlling System)

Controlling Outcome:

The HABIT of holding print (or work) at the proper distance from the eye.

Elements of the Complex

Strengthening Elements:

1. The REALIZATION that holding print or work too close to the eyes is often the cause of postural defects.

2. The REALIZATIONS relating to the importance of good eyesight (see Complex C-1-a-8).

Counter-Acting Elements:

1. The HABIT of "correcting" one's posture occasionally when doing close work (to counteract unconscious relaxation of the body).

Completing Elements:

1. The PROPER STANDARDS of posture when using the eyes for reading or other close work, e. g.,
(a) reading
(b) writing
(c) sewing
(d) drawing

2. The REALIZATION that one should practice these STANDARDS at every opportunity.

3. The REALIZATION that certain types of occupation lend themselves rather easily to eye-strain and postural defects—typists, draughtsmen, certain types of clerical positions, etc.

Limiting Elements:

1. The REALIZATION that not only reading but any close work tends to produce eye-strain and a strained or unnatural position of the body.

2. The REALIZATION that "proper distance" is to be interpreted as
(a) not too close to the eyes
(b) not too far away from the eyes.

3. The REALIZATION that the STANDARD distance is about twelve inches.

Transferring and Interconnecting Elements:

1. An ATTITUDE of conscious observation of one's posture when doing any close work.

2. An ATTITUDE of desiring expert service for remedial treatment when necessary.

3. An ATTITUDE of being desirous of protecting and conserving one's eyesight as much as possible.

4. VOCABULARY CONTROL:
(a) An understanding or
(b) An ability to use intelligently, certain terms related to the physiology and hygiene of the eye.

Health Education Complex C-I-a-4
(Controlling System)

Controlling Outcome:

The HABIT of reading only when properly situated (position or location).

Elements of the Complex

Strengthening Elements:

1. A REALIZATION of the similarity existing between the focusing of the eye and the focusing of a camera.

2. A REALIZATION of the delicacy of the focusing mechanism of the eye.

3. The REALIZATIONS relating to the importance of good eyesight (see Complex C-1-a-8).

Counteracting Elements:

1. The REALIZATION that violation of this health habit (controlling outcome) not only causes eye-strain, but frequently results in harmful effects on other parts of the body—nausea, headache, etc. (to counteract carelessness in regard to the proper position for reading).

Completing Elements:

1. The REALIZATION that frequent and continuous change of focus (e. g., jolting when reading causes undue strain on the adjusting mechanism which enables one to focus the eye properly.

2. A REALIZATION of the intimate relationship existing between the eye and other parts of the nervous system, even though remote.

3. The REALIZATION that the vibration, jolting, or swaying experienced when riding in an automobile, trolley-car, or train, or when in a hammock, swing or rocking-chair, probably imposes strain on the eyes of anyone reading at such times.

4. The REALIZATION that (if the light is sufficient) the better seats for reading are those nearer the center aisle, rather then those next to the window, because of the reduced amount of vibration or sway.

5. The REALIZATION that rapidly moving objects in the field of vision, necessitating continual change of focus has a tendency to strain the eye, and frequently is a cause of car sickness.

6. The REALIZATION that prolonged "movies" may cause eye-strain.

7. The REALIZATION that the practice of reading when lying down is considered a possible source of eye-strain.

Limiting Elements:

1. The REALIZATION that "proper position" is to be interpreted as:

(a) one that is relatively fixed

(b) one that permits easy adjustment of the head and eyes (the lack of this element constitutes the objection to reading while lying down).

(c) one that does not permit of constant vibration, jarring, or motion that would result in a constant change of focus.

Transferring and Inter-Connecting Elements:

1. An ATTITUDE of conscious discrimination as to conditions or situations that might result in eye-strain.

2. An ATTITUDE of desiring to conserve and protect one's eyesight as much as possible.

3. VOCABULARY CONTROL:
(a) An understanding of, or
(b) An ability to use intelligently, certain terms related to the physiology and hygiene of the eye.

Health Education Complex C-I-a-5
(Controlling System)

Controlling Outcome:

The HABIT of giving the eyes proper attention when they feel sore or tired.

Elements of the Complex

Strengthening Elements:

1. A REALIZATION of the delicacy of the mechanism of the eye (comparison with the care given a fine watch, automobile, etc.).
2. The REALIZATION that tired or sore eyes are signals of distress:
(a) eye defects or strain, or
(b) trouble elsewhere in the body.
3. The REALIZATIONS relating to the value of good eyesight (Complex C-1-a-8).

Counteracting Elements:

1. The REALIZATION that long continued abuse will intensify original defects, and will often lead to other defects (to counteract indifference toward possible eye-strain).
2. The REALIZATION that "tired eyes" may be the result of over-use, rather than of a defect (to counteract strain resulting from over-use of eyes).
3. The HABIT of resting the eyes occasionally when reading or when doing close work by gazing at the horizon, or some object in the distance (to counteract possible strain resulting from doing prolonged close work or reading).
4. The REALIZATION that eye-strain may be prevented by
(a) scientifically adapted spectacles
(b) proper light or illumination
(c) systematically resting the eyes in some cases.

(to counteract the harmful effects of conditions causing eye-strain).

Completing Elements:

1. The REALIZATION that one should not read, sew, or do any close work for too long a period.
2. The REALIZATION that inflammation may be due to eye-strain, smoke fumes, or gases.
3. The REALIZATION that bathing the eyes with warm water provides good temporary relief when they are sore or inflammed.
4. The REALIZATION that very small fine type is hard on the eyes.
5. The REALIZATION that subjecting the eye to one color for a prolonged time is tiring to the eye.
6. The REALIZATION that some colors are more tiring than others (e. g., red is more tiring than green).
7. The REALIZATION that to read too long at night, after doing close work all day, may result in eye-strain.
8. The REALIZATION that headache is a possible indication of over-use of the eye.
9. The REALIZATION that the tones or shades (and masses) in wall paper have either a resting or an irritating effect on the eye.
10. An ATTITUDE of desiring to read books of editions containing large print, and of reducing to a minimum the reading of small print.
11. A REALIZATION of the peculiar necessity in the choice of a wall paper for a bed-room of selecting paper of a soft tone and of an unobtrusive design.
12. An ATTITUDE of desiring to avoid use of red and other glaring or clashing colors in interior decorative effects—lamp shades, etc.
13. The HABIT of checking on one's posture at frequent intervals when doing close work.

Limiting Elements:

1. A REALIZATION that proper attention implies not only the resting of tired eyes and the bathing of sore or inflammed

eyes, but the services of an oculist where the eye trouble is chronic or recurrent.

2. The REALIZATION that the services of an Oculist are to be preferred to those of an Optometrist or Optician.

3. The REALIZATION that certain causes of eye trouble are systemic in nature, and require the services of a physician.

Transferring and Interconnecting Elements:

1. An ATTITUDE of desiring to conserve and protect one's eye-sight whenever possible.

2. An ATTITUDE of desiring to secure the services and advice of an eye specialist or an oculist, rather than that of depending on lotions, and other preparations.

3. An ATTITUDE of desiring periodic examination of the eyes, especially if one has eye trouble of any kind.

4. An ATTITUDE of intelligent introspection toward the condition of one's eyesight.

5. VOCABULARY CONTROL:

(a) An understanding of, or

(b) An ability to use intelligently, certain terms related to the physiology and hygiene of the eye.

Health Education Complex C-I-a-6
(Controlling System)

Controlling Outcome:

The HABIT of wearing glasses regularly if they have been properly prescribed.

Elements of the Complex

Strengthening Elements:

1. The REALIZATION that training and treatment, in most cases, can largely overcome defects of the eye.

2. The REALIZATION that "training" or treatment to be most effective should be constant and persistent rather than intermittent.

3. REALIZATIONS relating to the value of good eye-sight.

Counteracting Elements:

1. The REALIZATION that "cross-eye" uncorrected means

that one eye is largely unused, and hence failing in vision (to counteract neglect to wear glasses, or to secure other remedial treatment).

2. The REALIZATION that it is better from both hygienic and economic points of view, to have a slight defect corrected now than a greater one—or a resulting group of defects—at a later time (to counteract the tendency to procrastinate in having one's defects corrected).

Completing Elements:

1. The REALIZATION that nearly one-half of the people have eye defects of some sort.

2. The REALIZATION that "car-sickness" may be caused by defective vision.

3. The HABIT of providing one's self, if possible, with several sets of glasses:

(a) for reserve or emergency use.

(b) for various occasions—dress, sport, glare, etc.

4. The HABIT of protecting one's glasses or spectacles when not in use.

5. The HABIT of cleaning the glass frequently and properly.

Limiting Elements:

1. The REALIZATION that the services of an oculist with his ophthalmoscope are to be preferred to those of the optometrist (who merely measures the error of refraction) or the optician (who merely makes and sells optical goods).

2. The REALIZATION that spectacles are probably to be preferred to eye-glasses, since spectacles have a fixed position on the nose that insures a better focus, while eye-glasses have a tendency to slide down the nose, or else become awry because of bent condition of the guards, or nose-piece.

3. The REALIZATION that there are certain times when common-sense indicates that eye-glasses or spectacles should not be worn—e. g., when asleep, washing the face, etc.

Transferring and Interconnecting Elements:

1. An ATTITUDE of desiring to wear only eye-glasses or spectacles that have been scientifically prescribed.

2. An ATTITUDE of desiring periodic examination of the eyes.

3. An ATTITUDE of desiring to protect and conserve one's eye-sight whenever possible.

4. VOCABULARY CONTROL:

(a) An understanding of, or

(b) An ability to use intelligently, certain terms related to the physiology and hygiene of the eye.

Health Education Complex C-I-a-7
(Controlling System)

Controlling Outcome:

A REALIZATION of the sympathetic relationship existing between the eye and other parts of the body.

Elements of the Complex

Strengthening Elements:

1. The REALIZATION that the health of other parts of the body affects the eye.

2. The REALIZATION that the optic nerve is a part of the great nervous system which completely controls all body processes.

3. The REALIZATION that the condition of the eye (e. g., "strain") affects other functions of other organs (e. g. digestion).

Counteracting Elements:

1. The REALIZATION that drugs affect the eyes—e. g., belladona and morphine—and that they should not be taken unless prescribed by a physician (to counteract the possible harmful effects of drugs on the eyes).

2. The REALIZATION that many patent medicines, bayrum, and whiskey, contain wood alcohol, which, taken internally, has a deadly effect on the optic nerve. One teaspoonful is enough to cause complete loss of sight—(to counteract unwise use of patent medicines, bayrum, whiskey, etc.).

Completing Elements:

1. The REALIZATION that nausea, vomiting and headache are often the trouble to disorders of eyesight.

2. The REALIZATION that careful examination by an eye-specialist will often reveal the presence of organic disease (e. g., diabetes).

3. The REALIZATION that an improper diet has a bad effect on the eyes.

(a) That so-called "protective foods"—milk, fruit, juices, and green leaves—are necessary to the health of the eye.

(b) That ulcer of the cornia is frequently related to a peculiar trouble with one particular food.

4. The REALIZATION that all diseases, particularly the infectious ones, affect the eyes to some extent through the basic nervous system:

(a) Measles—(require darkened room)

(b) Small-pox—(formerly caused much blindness).

(c) Diphtheria—(notoriously bad effect on nervous system).

(d) Venereal diseases often cause blindness of babies.

(e) Goitre of a certain type often cause protruding eyes.

5. The REALIZATION that too much food and too little exercise may result in diabetes, which also affects the lens, causing blindness and cataract.

6. The REALIZATION that ear, nose and throat troubles should receive prompt medical attention due to the fact that it is possible for the infection to reach the eye by means of the circulation.

7. A REALIZATION of contagious nature of "pink-eye" (conjunctivitus) and a consequent attitude of desiring to avoid it.

8. The REALIZATION that eternal vigilance must be exercised to avoid serious infection. Trachoma, once a rare disease from the Far East, has recently been characterized as common in the American school and industrial shop.

9. The REALIZATION that the most common media of infection are the fingers, the wash bowl, and the common towel.

Limiting Elements:

None.

Transferring and Interacting Elements:

1. An ATTITUDE of desiring to avoid illness, because of its possible influence on the eyes.

2. An ATTITUDE of desiring the best of care and skilled attention when sick—to avoid or to mitigate as far as possible—the possible ill effects on the eye.

3. A REALIZATION of the peculiar temptation offered by the convalescent stage—tendency to want to pass the time by reading when one's eyes may be in a weakened condition.

4. VOCABULARY CONTROL:
(a) An understanding of, or
(b) An ability to use intelligently, certain terms related to the physiology and hygiene of the eye.

HEALTH EDUCATION COMPLEX C-I-a-8
(Controlling System)

Controlling Outcome:

A REALIZATION of the importance of good eyesight.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. REALIZATIONS relating to the social value of good eyesight:
(a) More acceptable to others—"cosmopolitan" aspect.
(b) Protective against accidents
(c) Keener observation of factors in our environment, e. g., detect and meet moods of friends (tact, discrimination, etc.).

2. REALIZATIONS relating to the utilitarian value of good eyesight:
(a) walking
(b) finding one's way
(c) working
(d) education
(e) news, etc.

3. REALIZATIONS relating to the economic value of good eyesight.
(a) certain positions require good eyesight

(b) loss of position due to inability to discriminate, errors, etc.

4. REALIZATIONS relating to the aesthetic value of good eyesight:

(a) beauties of nature
(b) works of art
(c) reading
(d) sports
(e) theatre, moving pictures, etc.

Counteracting Elements:

1. The REALIZATION that eye-defects uncorrected lead to greater defects—eye, postural, systemic (to counteract indifference toward the correction of minor eye defects).

2. A REALIZATION of the tremendous use (work done) of the eye—like the heart; with the counteracting REALIZATION that every organ has its limit and must not be overstrained (to counteract tendency to over-use the eye, e. g., "close work" all day and again in the evening).

Completing Elements:

1. The REALIZATION that good eyesight is valuable to laboring man and professional man alike.

2. The REALIZATION that any inflammation of the eye is serious, particularly

(a) if treatment is delayed
(b) if wrong home treatment is given.

3. The REALIZATION that many breakdowns of middle age are due to reflex conditions resulting from defects of vision.

Limiting Elements:

1. The REALIZATION that valuable as it may be, there are other considerations even more valuable than one's eyesight —character, safety of loved one's, etc.

Transferring and Interconnecting Elements:

1. An ATTITUDE of desiring to protect and conserve one's eyesight whenever possible.

2. An ATTITUDE of desiring periodic examination of the eye.

3. An ATTITUDE of healthful introspection regarding the state of one's sight.

4. VOCABULARY CONTROL:

(a) An understanding of, or

(b) An ability to use intelligently, certain terms related to the physiology and hygiene of the eye.

Health Education Complex C-I-a-9
(Controlling System)

Controlling Outcome:

The HABIT of taking proper precautions to avoid accidents to the eye.

Elements of the Complex

Strengthening Elements:

1. The REALIZATION that almost all accidents to the eye are avoidable.

2. A REALIZATION of the great value of the eye to happiness and efficiency (Complex—C-1-a-8).

Counteracting Elements:

1. The REALIZATION that one must be safe today if one is to enjoy tomorrow (to overcome careless habits or tendencies).

2. The REALIZATION that safety must come first, particularly in industry. (to overcome careless habits—neglecting to wear goggles, etc.).

Completing Elements:

1. The REALIZATION that in case of accident one should not permit immature, incompetent, or unknown people to minister to the eye, if it is possible to avoid it.

2. The REALIZATION that sharp points should not be used in an attempt to extract foreign bodies from the eye; a tooth-pick covered with cotton being preferred; that if this is ineffective the services of a physician should be sought.

3. The REALIZATION that the protective devices required in certain lines of industry should always be worn—goggles, special lenses (color), helmets in machine shops, blast furnaces, elective welding, etc.

4. A REALIZATION that spectators are often injured while watching men at work where chips of stone or metal are flying.

5. A REALIZATION that horse play or crude jokes are often dangerous to the eye—e. g., a mock jab at one's eye with a pointed pencil or a pen point.

6. The REALIZATION that hurry is often the cause of injuries to the eye which accidents might not have happened, if there had been no hurry—e. g., running around a corner, flying glass in automobile accidents, etc.

7. The REALIZATION that carelessness is the cause of many accidents to the eye.

Limiting Elements:

1. The ATTITUDE of being willing to risk one's eyesight—not carelessly but for the achievement of some justifiable ethical end—one's honor or reputation, or the honor or safety of one's loved ones, to save the lives of others, etc.

Transferring and Interconnecting Elements:

1. An ATTITUDE of desiring to protect and conserve one's eye-sight whenever possible.

2. An ATTITUDE of "Safety-First."

3. VOCABULARY CONTROL:

(a) An understanding of, or

(b) An ability to use intelligently, certain terms related to the physiology and hygiene of the eye.

C-I-b. Desirable outcomes relating to the care of the ears.

HEALTH EDUCATION COMPLEX C-I-b
(Controlling System)

Controlling Outcome:

The HABIT of taking proper care of the ears.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. A REALIZATION of the delicacy of the mechanism of the ear.

2. A REALIZATION of the value of the sense of hearing:
(a) economic and financial
(b) social
(c) aesthetic
(d) educational, etc.
(e) vocational, etc.

3. The REALIZATION that poor hearing may be the cause of a serious accident to the individual.

4. The REALIZATION that poor hearing may cause one to lose a good job.

5. The REALIZATION that ear trouble may sometimes result in serious illness and death (mastoiditis).

Counteracting Elements:

1. A REALIZATION that pulling the ear may injure the delicate structure of the ear (to counteract the pulling of the ears in play or in anger).

2. A REALIZATION that boxing the ear may injure the ear drum (to counteract the injurious habit of boxing the ear).

3. The HABIT of avoiding loud noises or other practices which might endanger the hearing (to counteract the harmful effects from sources indicated).

Completing Elements:

1. The REALIZATION that if adenoids or tonsils interfere with hearing, the condition should be corrected (A-9 & 10).

2. The HABIT of blowing the nose properly (A-9 & 10).

Completing Elements:

3. The REALIZATION that excess wax in the ear canal should be carefully removed, preferably not by one's self.

4. The REALIZATION that excess wax can be removed by rolling a single thickness of a clean handkerchief or towel into a point, inserting it into the canal and cleaning gently.

5. The HABIT of cleaning the outer ear when washing the face.

6. The REALIZATION that a "discharging" ear is generally the result of inflammation of the inner ear, resulting often from colds, sore throat, influenza, measles, other infectious diseases,

enlarged tonsils or adenoids and should receive prompt and competent medical attention.

7. A REALIZATION that inflammation of the ear may be caused also by water in the nose and throat (diving), improper use of nasal douche, gargling, or by blowing the nose improperly.

8. The REALIZATION that an awkward dive or fall into the water (when bathing) may injure the drum of the ear.

9. The REALIZATION that diving into cold salt water should be avoided.[13]

10. The REALIZATION that hot applications are valuable for temporary relief from pains in the ear.

Limiting Elements:

1. A REALIZATION of the significance of the expression: "the ears are best cared for by letting them alone."

2. A REALIZATION that one should not be morbidly conscious of the health of the ears.

Transferring and Interconnecting Elements:

1. An ATTITUDE of Introspection for the early detection of symptoms of ear trouble.

2. An ATTITUDE of desiring the services of a medical expert for diagnosis and treatment of any severe (or chronic) ear trouble.

3. An ATTITUDE of desiring to keep all foreign substances out of the canal of the outer ear—particularly sand (at the seashore), unclean water, small objects, etc., and the consequent ATTITUDE of using ear protectors or "stops" when bathing or swimming in natural bodies of water.

4. An ATTITUDE of desiring to prevent or remedy any condition that obstructs or closes the Eustachian tube (resulting in temporary or permanent deafness).

5. An ATTITUDE of desiring to avoid the use of any medication in the ear unless prescribed by a reputable physician.

6. VOCABULARY CONTROL:
(a) the understanding of, or

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[13] Williams: Personal Hygiene Applied, p. 395.

(b) the intelligent use of certain terms related to the physiology and hygiene of the ear.

C-I-c. Desirable outcomes relating to the mouth. (See A-VIII, etc.)

C-I-d. Desirable outcomes relating to the care of the nose and throat. See A-IX and X.

C-2. Desirable outcomes relating to the care of the circulatory system.

Health Education Complex—C-II

Controlling Outcome:

The HABIT of taking proper care of the health of the circulatory system.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. A REALIZATION of the important functions of good circulation:

(a) carries oxygen from the lungs and food-stuffs from the digestive tract to the tissues of the body.
(b) Carries wastes and excess water to the organs of elimination.
(c) Assists in the regulation of the body temperature.
(d) Acts as a medium for the transmission of the internal secretions of the ductless glands.

2. The REALIZATION that mortality from circulatory diseases is increasing in the United States;[14] that in some cities and states the mortality rate is already higher than the rate from tuberculosis.[15]

3. A REALIZATION of the significance of the saying "a man is as old as his arteries."

Counteracting Elements:

1. The REALIZATION that health comes from living in the right way and cannot be secured by taking patent medicines

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[14] Williams: Personal Hygiene Applied, p. 240 and 241.
[15] Darlington: Health and Efficiency, p. 223.

(to counteract the habit of taking of patent medicines to secure "good blood").

2. The REALIZATION that the use of drugs for colds and headaches by the laity (without the advice of a reputable physician) is distinctly dangerous because of the possibility of injury to the heart (to counteract the indiscriminate use of drugs for colds and headaches).

3. The REALIZATION that long continued pressure of clothing (especially about the waist, neck and legs) is detrimental to the unimpeded circulation of the blood (to counteract the wearing of tight clothing).

4. A REALIZATION of the harmful effects of the use of tobacco on the heart (see D-12)—(to counteract the excessive use of tobacco, or the use of tobacco by immature persons).

5. The REALIZATION that shoes that are too tight restrict the circulation of blood to the feet (to counteract the wearing of tight shoes).

6. The REALIZATION that poor posture (Complex D-7) by the creation of prolonged pressure may cut off a proper supply of blood (and nutrition, etc.) to certain vital organs, and to other parts of the body (to counteract habits of poor posture).

7. The REALIZATION that indigestion is often due to poor abdominal circulation caused by the doubling or cramping of the internal organs (to counter-act habits of poor posture).

8. An ATTITUDE of desiring to avoid toxins caused by:[16]

(a) over-fatigue or exhaustion

(b) use of alcohol

(c) Indigestible foods.

Completing Elements:

1. Desirable HABITS relating to the selection of food.[17] (See D-4).

2. Desirable HABITS relating to drinking of water. (See D-3.)

3. Desirable HABITS relating to the breathing of fresh air.[17] (See D-1.)

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[16] See Course of Study in Health Education, Goodes, 7, 8 and 9, Phila. Public Schools, p. 15.

[17] Pa. Study Course of Study in School Health, p. 68.

4. Desirable HABITS relating to exposure to sunshine. (See D-2.)

5. Desirable HABITS relating to sleep.[17] (See D-8.)

6. Desirable HABITS relating to cleanliness.[17] (See objectives A & B.)

7. Desirable HABITS relating to the prompt and proper elimination of body wastes. (See C-5.)

8. Desirable HABITS relating to recreation and exercise. (See D-6.)

9. Desirable HABITS relating to the nervous system. (See C-6.)

10. The REALIZATION that proper exercise is beneficial to circulation.

11. An ATTITUDE of desiring to avoid certain general causes of diseases of the heart and blood-vessels.

(a) infectious diseases:
  (a) children—lack of care particularly in the convalescent stages of scarlet fever, whooping cough, diphtheria, rheumatism, pneumonia, or sore throat.
  (b) adults—influenza, pneumonia, rheumatism, typhoid, gonorrhea, syphilis.

(b) faulty elimination
(c) overeating
(d) inactivity
(e) physical strain
(f) interference with circulation
(g) excess emotion
(h) drugs

12. The REALIZATION that "disease of the heart may be the result of a systematic infection (one general disease of the body) or of a local infection (a local point of infection)."[18]

13. The REALIZATION that "in most instances the local inflammation that produce most cases of heart disease occur in the throat or the mouth—the tonsils or the teeth."[18]

14. The REALIZATION that in general there are few

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[18] Darlington: Health and Efficiency, p. 219.

diseases which respond to systematic treatment as satisfactorily as diseases of the heart.

15. The REALIZATION that athletics should be taken in moderation, according to one's ability and capacity.

Limiting Elements:

1. The REALIZATION that too much activity or exercise after a prolonged illness or an operation may endanger the heart.

2. The REALIZATION that while moderate exercise strengthens the heart muscle and stimulates circulation, excessive exercise or undue strain may injure the heart.

3. The REALIZATION that the other extreme—a sedentary life and total lack of exercise—will result in the heart's losing its muscular tone with a corresponding increase in the danger of overstrain.

4. The REALIZATION that one should not be morbidly conscious of the health of one's circulation and circulatory organs.

Transferring and Interconnecting Elements:

1. An ATTITUDE of desiring a periodic health examination for the early detection, among others, of the first symptoms of the development of heart disease so that adequate remedial measures may be taken.

2. An ATTITUDE of Introspection toward the condition of one's circulation and circulatory organs.

3. An ATTITUDE of desiring competent medical treatment for any ailment of the circulatory (see E-3).

4. VOCABULARY CONTROL:

(a) an understanding of, or

(b) an intelligent use of, certain terms related to the physiology and hygiene of the circulatory system.

C-3. Desirable outcomes relating to the care of the digestive system.

HEALTH EDUCATION COMPLEX C-III
(Controlling System)

Controlling Outcome:

The HABIT of taking proper care of the digestive system.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The REALIZATION that the degree of efficiency in converting food into nourishment is dependent upon the health and well-being of the digestive system.

Counteracting Elements:

1. The REALIZATION that saliva should be conserved for the digestion of food (to counter-act the habit of spitting and the habit of using chewing gum to excess, particularly before meals).
2. The REALIZATION that over-eating and eating at irregular times and between meals are injurious to the well-being and general efficiency of the digestive system (to counteract the undesirable practices indicated above).
3. HABITS relating to tea, coffee, and alcoholic liquors (see D. 11 and D. 13)—(to counteract injurious use of these stimulants).
4. An ATTITUDE of distrust toward patent medicines and nostrums, with the accompanying REALIZATION that competent medical diagnosis and treatment is to be preferred (to counteract use of "fake" remedies).
5. The REALIZATION that one should never begin a meal by drinking cold water (to counteract that practice).

Completing Elements:

1. HABITS relating to the proper care of the teeth. (See A-8.)
2. HABITS relating to the prompt and proper elimination of waste. (See C-5.)
3. HABITS relating to the proper selection and eating of food (D-4).
4. The HABIT of eating one's meals at regular hours.
5. The HABIT of playing quietly (light activity) or of resting after meals.
6. The HABIT of eating the evening meal, at least, several hours before retiring.
7. HABITS relating to the proper care of the nervous system (see C-6).
8. The HABIT of eating at regular hours.

9. The HABIT of eating slowly and chewing the food thoroughly.

10. The HABIT of drinking plenty of pure water between meals, etc. (See D-3.)

11. The HABIT of using a balanced diet. (See D-4.)

12. A REALIZATION of the need of periodic physical examination.

Limiting Elements:

1. The REALIZATION that while we cannot control peristalsis—and under normal conditions the actual process of digestion and assimilation, we can control

(a) the selection of our food
(b) the quality and quantity of our food
(c) the times for eating
(d) the evacuation of waste.

2. The REALIZATION that one should not be morbidly conscious of the condition of one's digestive system.

Transferring and Interconnecting Elements:

1. An ATTITUDE of cheerfulness during meals.

2. An ATTITUDE of desiring to avoid the causes of indigestion.[19]

3. An ATTITUDE of Introspection toward the health of one's digestive system.

4. An ATTITUDE of desiring only competent medical advice for diagnosis and treatment of any disorders of the digestive system.

5. VOCABULARY CONTROL:

(a) an understanding of, or
(b) the intelligent use of, certain terms related to the physiology and hygiene of the digestive system.

C-4. Desirable outcomes relating to the care of the respiratory organs.

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[19] A very good statement of these may found in Williams: Personal Hygiene Applied, p. 190 and 191.

Health Education Complex C-IV
(Controlling System)

Controlling Outcome:

The HABIT of taking proper care of the respiratory system.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. A REALIZATION of the significance of the fact that in New York City ordinarily over one-fourth of the deaths that occur during the winter months are the result of some form of lung disease.[20]

2. The REALIZATION that all of them are largely unnecessary and preventable.[20]

3. A REALIZATION of the economic loss, mental stress, and personal sacrifices caused by a disease of the lingering type of tuberculosis.

Counteracting Elements:

1. The HABIT of deep breathing (to counteract underdeveloped lungs and the lodging and propagation of disease germs in the less used parts of the lungs.

2. The REALIZATION that enlarged tonsils, adenoids, and other nasal obstructions should be rectified or removed (to counteract diseased conditions in the respiratory tract).

3. The REALIZATION that cold, fatigue, alcohol, and influenza lessen one's resistance to pneumonia (to counteract the possibility of the contraction of this disease through carelessness).

4. The REALIZATION that the chief predisposing causes of tuberculosis are:[21]

(a) lack of nourishing food. (See D-4.)
(b) lack of proper exercise. (See D-6.)
(c) lack of sleep and rest. (See D-8.)
(d) lack of sunlight. (See D-2.)
(e) bad teeth. (See A-8.)
(f) getting over-tired. (See D-6.)
(g) poor ventilation and bad air. (See D-1.)

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[20] Darlington: Health and Efficiency, p. 199.
[21] After Darlington, p. 205.

(h) injury to mucous membrane from exposure to dust, gases or fumes. (See D-1.)
(i) other diseases, e. g. bronchitis. (See C-4) (Trans.)
(to counteract the contraction of tuberculosis through bad habits or lack of care).

5. The HABIT of breathing through the nose (to counteract harmful effects of mouth-breathing).
(a) unfiltered air
(b) cold air
(c) harmful effects on mouth.

Completing Elements:

1. Desirable HABITS relating to Fresh Air—and ventilation (see D-1).

2. Desirable HABITS relating to sunlight (D-2).

3. HABITS relating to the care of the nose and throat. (See A-9 and 10.)

4. HABITS relating to the care of the mouth. (See A-7.)

5. HABITS relating to the taking of proper precautions for keeping one's resistance high (particularly in winter):
(a) Personal cleanliness
hands—see A-1.
teeth—see A-8.
mouth—see A-7.
(b) Eating regularly. See C-3 and D-4.
(c) Avoiding colds. See E-1, A-9 and 10.
(d) Sufficient sleep. See D-8.
(e) Proper ventilation. See D-1.
(f) Proper elimination. See C-5.

6. The REALIZATION that while we cannot avoid contact with disease germs, that we can lessen our chances of infection by raising our resistance to them.

7. The HABIT of carefully regulating the indoor temperature (68° preferred, with 68° and 70° the range), and where possible, avoiding great changes in temperature.

8. The REALIZATION that while it is difficult to regulate

the exact percentage of humidity in the home (60 per cent being desirable) excessive dryness may be avoided by:[22]

(a) open window ventilation

(c) liberal use of potted plants in the room

(c) vapor pans, generally in connecting with the heating system.

9. The HABIT of cold bathing which helps to keep the mucous membrane of the respiratory tract in good condition.

10. HABITS relating to correct posture (D-7).

11. The HABIT of wearing loose clothing (non-restrictive of freedom in breathing).

12. The HABIT of sleeping with the windows open.

13. The REALIZATION that exercise of large groups of muscles, as in running, develops the lungs and one's breathing power.

14. The REALIZATION that many commercialized remedies, patent medicines, are "fakes" and as a general proposition are not to be relied on.

15. The REALIZATION that "the principal way to avoid pneumonia is to keep the mouth in a clean and healthy state."[23]

16. The REALIZATION that "bronchitis generally has its beginning in a neglected cold in the head."[24]

17. The REALIZATION that the specific cause of asthma can (generally) be scientifically determined, and avoided.

18. The REALIZATION that two great sources of infection (tuberculosis) are:

1. flies
2. infected cows milk.

19. The REALIZATION that the best exercises for lung development are outdoor games and sports (running for boys and skipping for girls are particularly recommended).[25]

20. A REALIZATION of the significance of Hutchinson's statement that "a person's age is not dependent upon the number of years that have passed over one's head, but upon the number of colds that have passed through one's head."

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[22] Williams: Personal Hygiene Applied, p. 210.
[23] Darlington: p. 208.
[24] Darlington: p. 208.
[25] Williams: p. 221.

Limiting Elements:

1. The REALIZATION that one should not be morbidly conscious of the health of the respiratory system, particularly the lungs.

Transferring and Interconnecting Elements:

1. An ATTITUDE of desiring to avoid exposure to dust, germs, fumes, and poisonous gases.
2. An ATTITUDE of desiring to avoid colds and other diseases of the respiratory tract.
3. An ATTITUDE of desiring competent medical treatment for colds and other diseases of the respiratory tract.
4. An ATTITUDE of Introspection toward the condition of one's respiratory system.
5. An ATTITUDE of desiring to avoid the conditions predisposing to colds. (See Complex E-1).
6. VOCABULARY CONTROL:

(a) an understanding of, or
(b) an intelligent use of, certain terms related to the physiology and hygiene of the respiratory system.

C-5. Desirable outcomes relating to the care of the excretory systems.

HEALTH EDUCATION COMPLEX C-V
(Controlling System)

Controlling Outcome:

The HABIT of taking proper care of the excretory systems (skin, lungs, urinary system, intestines).[26]

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The REALIZATION that proper functioning of the excretory system is vital to life, as waste that is not promptly eliminated drugs, poisons or infects many parts of the body.
2. The REALIZATION that each of the four methods of elimination assists the other three, and that if one is not functioning properly an increased burden or strain is placed upon the other three.

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[26] Williams and Darlington particularly valuable.

3. The REALIZATION that appendicitis is "associated" with chronic constipation.

Counteracting Elements:

1. The REALIZATION that to eat meat more than once a day may be harmful to the kidneys (to counteract too much protein in one's diet).

2. An ATTITUDE of distrust toward patent medicines and nostrums, particularly those labeled as kidney "remedies" (formerly "cures")—(to counteract the harmful effects of neglecting to get competent medical attention).

Completing Elements:

1. HABITS relating to bathing and the skin (see A-4).

2. HABITS relating to the proper selection and wearing of clothing (see A-9 and D-10).

3. HABITS relating to the proper care of the respiratory system (see C-4).

4. HABITS relating to the proper care of the kidneys:[27]

(a) The HABIT of avoiding too much protein food.
(b) The HABIT of avoiding highly seasoned food.
(c) The HABIT of drinking at least one glass of water between meals, one with each meal, and one before retiring (to flush out the kidneys).
(d) HABITS relating (1), (2) and (3) above.
(e) The HABIT of exercising in moderation.
(f) The HABIT of responding promptly to nature's warning signal (toilet).
(g) The REALIZATION that alcoholic beverages are injurious to the kidneys.
(h) The HABIT of avoiding exhaustion, exposure, over fatigue, etc.
(i) The REALIZATION of the importance of a yearly urinalysis.
(j) The HABIT of avoiding all medication, treatment and appliances for the kidneys unless prescribed by a physician.

5. Certain OUTCOMES desirable for a proper functioning of the bowel:

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[27] N. Y. State Course of Study, p. 12.

(a) HABITS of correct posture—to overcome—dropping down of the viscera of the abdomen.
(b) Desirable HABITS of work, exercise and play (D-6) to overcome sluggishness of circulation and nutritive processes—contributory to constipation.
(c) Desirable HABITS relating to Food (D-4)—selection of coarse building foods rather than "a refined concentrated diet, too easily digested."
(d) Desirable HABITS relating to the selection of clothing (D-10)—avoiding particularly construction of the waist line by the belt or corset.
(e) Desirable HABITS relating to the drinking of water. (See 4 =c above and also D-3)—to soften contents of large intestines.
(f) The HABIT of evacuating the bowel at a regular time, preferably immediately after breakfast (see D-5).
(g) The HABIT of using a stool (for intestinal evacuation) of a height adapted to one's size.
(h) A REALIZATION of the value of some abdominal exercises on arising in the morning (where needed).
(i) The HABIT of avoiding all medications and treatment unless prescribed by a physician.

Limiting Elements:

1. The REALIZATION that one should not be morbidly conscious of the condition of one's excretory system.

2. The REALIZATION that while the habitual use of purgatives for the normal person is to be decried, their occasional use, or their use for certain people on recommendation of a reputable physician, is acceptable. It should always be REALIZED, however, that a normal regimen of life is to be preferred to the use of purgatives for the correction of constipation.

Transferring and Interconnecting Elements:

1. An ATTITUDE of Introspection toward the functioning of one's excretory systems.

2. The HABIT of undergoing regular periodic health examinations (with urinalysis, etc.).

3. A REALIZATION of the seriousness of any derangement of function in the excretory systems and a consequent ATTITUDE of desiring only competent medical advice and treatment.

4. VOCABULARY CONTROL:

(a) an understanding of, or

(b) an intelligent use of, certain terms related to the physiology and hygiene of the excretory systems.

C-6. Desirable outcomes relating to the nervous system.

HEALTH EDUCATION COMPLEX C-VI
(Controlling System)

Controlling Outcome:

The HABIT of taking proper care of the nervous system.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. A REALIZATION of the importance of the nervous system that it is the master or controlling system of all the so-called "SYSTEMS" in the body.

(a) A REALIZATION that all of the life process are dependent upon the nervous system for direction and control (autonomic nervous system).

(b) A REALIZATION that all of the voluntary or conscious performances of life emanate through the direction of the nervous system (cerebro-spinal nervous system).

Counteracting Elements:

1. An ATTITUDE of distrust toward patent medicines or "nerve tonics" for the nerves (to counteract the habit of using them).

2. A REALIZATION that narcotics, alcoholic beverages, or sedatives should not be used for the correction of nerve troubles unless prescribed by a reputable physician (to counteract the possibility of unwise use).

3. The REALIZATION that one should not take any medicine to ease pain unless it has been prescribed by a reputable physi-

cian (to counteract possible harm from mistaken self-diagnosis and medication.

4. The REALIZATION that over-excitement is injurious to the nervous system (to counteract habitual or prolonged states of nervous excitement or emotion).

Completing Elements:

1. A REALIZATION of the fact that the autonomic nervous system—which administers to the biologic needs of man—is receiving growing recognition as the groundwork and foundation of the cerebro-spinal nervous system.

2. A consequent ATTITUDE of seeking to make the basis of life secure by administering to the instinctive needs of the human organism through

(a) Desirable HABITS relating to self-expression—sex and other emotions. (See C-7).

(b) Desirable HABITS relating to play, recreation and physical work. (See D-6).

(c) Desirable HABITS relating to proper conditions of sleep.

3. Good Mental HABITS (see D-9 and Objective H).

4. The REALIZATION that bodily states often determine mental and emotional reactions—that even posture has influence on the way one thinks and how one feels.

5. The REALIZATION that all cerebro-spinal activity probably involves some excitation of the autonomic nervous system.

6. The HABIT of indulging in frequent (even though brief) periods of mental and physical relaxation.

7. The HABIT of abstaining from the use of tobacco in any form, particularly during that period of life while the body is growing (see D-12).

8. The HABIT of abstaining from the use of tea, coffee or alcoholic beverages (see D-11 and D-13).

9. HABITS relating to wholesome food (see D-4).

10. HABITS relating to the proper elimination of waste (see C-5 and D-5).

11. A REALIZATION of the nature and value of habits and of habit formation.

12. Desirable HABITS relating to the organs of the special senses (see C-I-a, b, c, d).

Limiting Elements:

1. The REALIZATION that one should not be morbidly conscious of one's "nerves" nor of the condition of one's nervous system.

2. The REALIZATION that the over-use or improper use of either one of the two nervous systems (cerebro-spinal and autonomic) at the expense of the other will lead to an inharmonious development.

3. The REALIZATION that because of the success attending man's use of the cerebro-spinal nervous system there has been a tendency to glorify, at the expense of the autonomic—producing as types of success in the past—the scholar, the monk, the Puritan, etc., "asceticism with its degradation of the body, scholasticism with its contempt of the physical, and Puritanism with its hatred and fear of play, self-expression and drama."[28]

Limiting Elements:

4. The REALIZATION that the great tendency of modern civilized life—business, factory system and industrialism—"with its emphasis on efficiency and system is to cut straight across the essential biologic needs of men—the organism."[29]

Transferring and Interconnecting Elements:

1. An ATTITUDE of desiring only competent medical advice and treatment for ailment of the nerves, or of the nervous system.

2. An ATTITUDE of Introspection toward the well being of one's nervous system.

3. The REALIZATION that pain is nature's danger signal and a consequent ATTITUDE of desiring only expert medical diagnosis.

4. An ATTITUDE of self-control, particularly in regard to the emotions.

5. VOCABULARY CONTROL:

(a) an understanding of, or

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[28] Williams: Personal Hygiene Applied, p. 315.
[29] Williams: Personal Hygiene Applied, p. 315.

(b) an intelligent use of, certain terms related to the physiology and hygiene of the nervous system.

C-7. Desirable outcomes relating to the care of the reproductive system.

HEALTH EDUCATION COMPLEX C-VII
(Controlling System)

Controlling Outcome:

The HABIT of taking proper care of the reproductive system:

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The REALIZATION that one's happiness and the happiness of others may be largely dependent upon the care taken of one's reproductive System.

2. An ATTITUDE of pride in one's physical, mental, and moral soundness and well-being.

3. The MOTIVE of emulation of outstanding characters of personal probity.

(a) of the present
(b) of the past
(c) legendary, etc.

Counteracting Elements:

1. An ATTITUDE of distrust toward "quack" doctors, advertising themselves as sex specialists, and toward sex nostrums, tonics, etc. (to counteract the tendency to patronize these evils).

2. The REALIZATION that many lives have been ruined, mentally and physically, by disease resulting from exposure due to a few moments of a mistaken idea of pleasure (to counteract indulgence in commercialized or clandestine prostitution—regarded as the chief source of infectious of social diseases).

3. The HABIT of taking certain precautions when using public toilets (to counteract any possibility of contracting a venereal disease).

4. The HABIT of bathing the genital regions carefully and frequently (in order to counteract body odor, local inflammation, etc.).

5. IDEALIZATION of the opposite sex (to counteract tendency to gratify sex instinct on an animal plane).

6. A REALIZATION of the value and the means of diverting sex desires:

(a) sports and games
(b) music and other forms of art
(c) wholesome plays and moving pictures
(d) hobbies, clubs, etc.

(to counteract instinctive sex desires).

7. A REALIZATION of the ill-effects of masturbation (to counteract tendency toward self-abuse).

8. A REALIZATION of the part played by the internal secretions of the sex glands (to counteract over-indulgence in sex).

Completing Elements:

1. OUTCOMES relating to the cleanliness of the genital organs (see also A-4).

2. OUTCOMES relating to the menstrual period:*[30]

(a) A REALIZATION of physical changes preceding.
(b) The HABIT of avoiding undue fatigue or exertion during.
(c) A REALIZATION that moderate exercise is helpful.
(d) An ATTITUDE of desiring to take particular care to be clean and dainty during.
(e) A REALIZATION that during this period, the sponge bath is to be preferred to the tub bath or the shower bath.
(f) A REALIZATION that the feet should be kept dry during
(g) A REALIZATION that the body should be kept warm during.
(h) The HABIT of obtaining plenty of rest and sleep especially at night.

3. OUTCOMES relating to pregnancy and the pre-natal period.

4. OUTCOMES relating to the sex function (see D-15).

5. OUTCOMES relating to the glandular system (see C-10).

6. HABITS of mental cleanliness (see also D-9).

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[30] See Williams: Personal Hygiene Applied, p. 346.

7. OUTCOMES relating to the control of the Emotions and the Ideals (see Objective H).

Limiting Elements:

1. The REALIZATION that one should not be morbidly conscious of the condition of one's Reproductive System.

Transferring Elements:

1. An ATTITUDE of Introspection toward the well being of one's reproductive system.
2. An ATTITUDE of desiring only competent medical advice and treatment for ailments of the reproductive system.
3. An ATTITUDE of seeking to avoid any possibility of infection by a social (or venereal) disease.

C-8. Desirable outcomes relating to the muscular system.

HEALTH EDUCATION COMPLEX C-VIII
(Controlling System)

Controlling Outcome:

The HABIT of taking proper care for the muscular system.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. A REALIZATION of the valuable outcomes[31] which may be attained through athletics—team games as one means of achieving good muscular development:
Social Assets—(co-operation, courage, etc.).
Physical Assets—(motor control, endurance, etc.).
Mental Assets—(resourcefulness, etc.).
Emotional Assets—(self-control—excitement, temper, etc.).

2. A REALIZATION of the varied types of activity through which it is possible to acquire good muscular development—Athletics, Outdoor and Indoor Sports, competing with Standards of Ability Tests, Dancing (Folk, gymnastic, natural, rhythmic play), Group Games, Gymnastics (Formal, apparatus, corrective, etc.), and stunts.

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[31] See Report of Joint Committee, p. 51.

3. A REALIZATION of the good effects of muscular activity upon the other systems of the body—stimulation of circulation, increased respiration, better elimination, improved digestion and assimilation, increased neural activity and control, etc.

Counteracting Elements:

1. The REALIZATION that exercise should be sufficient in amount and of a character to exercise all groups of large muscles (to counteract the over-development of one set of muscles at the expense of under-development of another set. Since muscles shorten with use, this would have a tendency to pull the muscles out of line).[32]

2. A REALIZATION of the injurious effects of sedentary life (to counter-act habitual inactivity and its consequent ill-effect on muscular development).

3. The REALIZATION that the infirmities of age as they relate to the muscular system may largely be postponed or prevented by avoiding the inactivity of a sedentary life (to counteract certain muscular infirmities caused by advancing age).

4. A REALIZATION of the need of prompt and correct treatment of hernia, ailment of the heart and toxic conditions (caused by diseased tonsils, bad teeth, constipation),[33] which latter have a detrimental effect on involuntary muscles (to counteract the development of the defects noted).

Completing Elements:

1. The REALIZATION that the Muscular System is composed of both voluntary and involuntary muscles; their respective structures and functions.

2. The HABIT of maintaining good muscle tone through outcomes related to proper sytematic exercise (see D-6).

3. HABITS relating to proper clothing (see A-11 and D-10).

4. Desirable HABITS relating to food (see D-4).

5. Desirable HABITS relating to fresh air (see D-1) and sunshine (see D-2).

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[32] Penna. State C. S. in School Health, p. 61.

[33] Course in Health Education, Grades 7, 8 and 9, Phila. Public Schools, p. 15.

6. HABITS relating to proper elimination (see Complexes C-5 and D-5).

7. Desirable HABITS relating to mental health (see Complexes C-6, D-9 and Objective H—particularly as they related to freedom from nerve strain).

8. An ATTITUDE of desiring to avoid toxins caused by:[34]

(a) over-fatigue or prolonged fatigue.

(b) use of alcohol.

(c) Indigestible foods.

9. HABITS relating to correct posture (see Complex D-7).

10. Certain minimum STANDARDS for muscular development use to provide enough power for enjoyable motor activity (according to Williams[35]):

"(a) Sufficient strength of trunk muscles to maintain an upright posture and to prevent any ptosis of vital organs.

(b) Sufficient strength of back and feet and leg muscles to produce
  (a) Ease and elasticity of gait
  (b) Power for walking, running and jumping.

(c) Sufficient strength of arm and shoulder muscles to swing with reasonable skill a golf club, axe, or racquet, to throw a ball, to row a boat or paddle a canoe, to pull a rope, to control a horse, and to swim Strength and skill should be sufficient to permit one to enjoy and to take satisfaction in such activities."

Limiting Elements:

1. The REALIZATION that exercise should not be too vigorous nor too prolonged.

2. The REALIZATION that one should not be too introspective (morbidly conscious) of the condition of one's muscular system.

3. The REALIZATION that exercise should be adapted to the age, sex, occupation, climate and the needs and abilities of the individual himself.

4. The REALIZATION that "big powerful muscles" is not a standard for muscular development that is suited to all,

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[34] See C. of S. in Health Education, Goodes 7, 8, 9, Phila. Public Schools, p. 15.

[35] Williams: Personal Hygiene Applied, p. 116.

but rather a healthy muscular tone, with a development suited to one's capacity and one's daily needs.

Transferring and Interconnecting Elements:

1. The REALIZATION that all involuntary muscles (particularly the heart and muscles controlling vital organs, blood vessels, etc.) are parts of the muscular system and should not be subjected to strain or abuse.

2. An ATTITUDE of Introspection toward the condition of one's muscular system.

3. An ATTITUDE of desiring periodic physical examination as a valuable means for the early detection of symptoms of ailments or defects of the muscular system.

4. An ATTITUDE of desiring competent advice either from a physician or a medical gymnast, from time to time, regarding the amount and character of the exercise one should take, particularly at the different stages of growth, development, and decadence.

5. VOCABULARY CONTROL:

(a) an understanding of, or

(b) an intelligent use of, certain terms related to the physiology and hygiene of the muscular system.

C-9. Desirable outcomes relating to the proper care of the skeletal system:

HEALTH EDUCATION COMPLEX C-IX-1
(Controlling System)

Controlling Outcome:

The HABIT of taking proper care of the skeletal system.

ELEMENTS OF THE COMPPEX

Strengthening Elements:

1. The REALIZATION that the skeletal system is the basis of posture.

2. A REALIZATION of the various values emanating from correct posture:

(a) Hygienic value—unimpeded functioning of organs.
(b) Economic value—aids in securing a position.
(c) Social value—personal attraction.
(d) Psychical value—Influence of poise on one's own mental attitude.

Counteracting Elements:

1. The HABIT of wearing shoes that fit the feet (to counteract deformities caused by extreme styles or poorly fitting shoes).

SUB-CONTRIBUTORY ELEMENTS:

(a) The REALIZATION that fitting shoes should be secured for feet that do not have normal form.
(b) The REALIZATION that, for the normal foot, the inner line of the shoes, from toe to heel, should be a straight line.
(c) The REALIZATION that the shoe should fit snugly over the arch and instep, and loosely over the toes.
(d) The REALIZATION that the heel should not be over 1¼ inches high, and in wearing surface should approximate the wearing surface of the heel of the foot.
(e) The REALIZATION that the services of an orthopedic surgeon, or foot specialist, should be secured for the prescription of shoes where orthopedic defects exist.
(f) The REALIZATION that most foot troubles originate in improper shoes.

2. Certain REALIZATIONS relating to proper procedure and corrective measures in cases of flat feet, and weak or fallen arches (to counteract incipient stages of flat feet and fallen arches).

3. The REALIZATION that the infirmities of age relating to skeletal system may be largely postponed or prevented by participation (moderate) in an active physical life (to counter-act certain skeletal infirmities of advancing age.

4. A REALIZATION of the necessity for proper handling and carrying of young children (to counteract improper handling of young children).

5. A REALIZATION of the nature of fractures, dislocations, sprains and bruises with respective "First Aid" measures (to counteract to some extent the injuries noted).*

* See Handbook, Boy Scouts of America or First Aid Booklet of America Red Cross (bibliographp).

6. A REALIZATION of the diagnosis, causes, prevention and correction of stoop-shoulders, spinal curvature, and flat-foot (to counteract in part the presence or development of the defects noted).

7. The REALIZATION that many skeletal defects can be rectified by proper remedial exercises and a determination to persevere.

Completing Elements:

1. A REALIZATION of the varying composition of the bony structure in youth and in old age, and the significance for growth and repair of breaks of these variations in composition.

2. The REALIZATION that the soundness of the skeletal system is dependent in part upon taking proper care of the joints and the ligaments of the body.

SUB-CONTRIBUTORY ELEMENTS:

1. The REALIZATION that excess body weight (overweight) probably imposes a strain upon joints and ligaments, particularly of the feet.

2. The REALIZATION that exercise, recreation and rest are needed to give increased strength and tone to the ligaments.

3. Desirable HABITS relating to fresh air and sunshine (D-1 & 2).

4. Desirable HABITS relating to foods (D-4)—with particular reference to foods that are vital to the building and nourishment of bone tissue—milk, cereals, eggs, green vegetables and fruits—and drinking water (D-3).

5. Desirable HABITS relating to work, exercise and play (D-4).

6. Desirable HABITS relating to proper posture (D-7).

7. The HABIT of wearing clothing that is not too tight, nor binding.

8. The HABIT of taking proper care of the feet (see A-2).

9. The REALIZATION that decay of the teeth is not due to a lack of cleanliness alone, but often to a lack of bone building foods in one's diet.

10. The REALIZATION that "rickets" is a disease or

condition of the bones due to pre-natal or post-natal deficiency in bone-building elements of diet.

Limiting Elements:

1. The REALIZATION that one should not be morbidly introspective regarding the condition of their skeletal system.

2. The REALIZATION that one should not be so conscious of their posture that it becomes a source of social embarrassment.

Transferring and Interconnecting Elements:

1. An ATTITUDE of Introspection toward the functioning of one's skeletal system.

2. The ATTITUDE of desiring the services of an expert, physician or medical gymnast, for diagnosis of, or remedial measures for, any ailment of the skeletal system.

3. A REALIZATION of the value of a good physical examination for the detection of possible skeletal defects.

4. An ATTITUDE of desiring to avoid certain causes of skeletal deformities:

(a) Insufficient or improper nourishment.
(b) Severe or prolonged strains.
(c) Poor posture.
(d) Diseases (infantile paralysis).
(e) [36]Exercising too localized:
    (a) Baseball pitcher
    (b) Weight carriers
        Hod carrier
        Newspaper boys
        Children with school books
(c) Horseback riding—if too young, or if excessive.

5. VOCABULARY CONTROL:

(a) an understanding of, or
(b) an intelligent use of, certain terms relating to the physiology and hygiene of the skeletal system.

C-10. Desirable outcomes relating to the care of the glandular system.

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[36] Penn. State C. of S., In School Health, p. 61.

HEALTH EDUCATION COMPLEX C-X
(Controlling System)

Controlling Outcome:

The HABIT of taking proper care of one's glandular system.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The REALIZATION that very little is known of the extent to which man may control, or utilize, the secretions of the ductless glands, but that it is probable that man may, by the avoidance of certain acts, contribute somewhat toward raising the level of his health with reference to the way these glands operate.[37]

2. The REALIZATION that while little may be known, or said *with certainty* regarding the function of the ductless glands, they are rapidly rising in importance in the estimation of medical and health authorities as great factors in good health.

3. The REALIZATION that these glands seem to have an important relation to:[38]

(a) normal growth
(b) normal supply of energy
(c) blood-pressure
(d) peristalsis
(e) muscle tone (particularly of blood vessels)
(f) the action of the heart.

Counteracting Elements:

1. The HABIT of using iodized table salt (even more valuable for girls than boys), to counteract enlargement of the thyroid gland (goitre).

2. The REALIZATION that the thyroid gland is susceptible to enlargement, especially during adolescence, and that such enlargement more prevalent among girls than among boys.

3. An ATTITUDE of suspicion and distrust toward patent medicines, nostrums, etc., for disorders, defects, or improvements in glandular function.

Completing Elements:

1. The REALIZATION that the so-called "endocrine system"

[37] See Williams: Personal Hygiene Applied, p. 265.
[38] Williams: Anatomy and Physiology, p. 459 et seq.

is composed of the thyroid, thymus, adrenals, pituitary body, panivids in part, pineal gland, ovaries, testes, and liver (in addition to its other functions).

2. The REALIZATION that the internal secretions of these glands act like drugs, and are of two main types:
(a) accelerating
(b) retarding.

3. The REALIZATION that emotional states cause bodily changes through the agency of these internal secretions.

4. The REALIZATION that "one's mental attitude unquestionably determines in a large measure the secretions of the ductless glands, and consequently, bodily health.[39]

Limiting Elements:

1. The REALIZATION that despite recent progress and research relating to the endocrine system, and the use of extracts from glands of internal secretion of animals, "endocrinology has not progressed far enough for the impartial observer to advise with any assurance concerning general matters or general principles."[40]

2. The REALIZATION that one should not be morbidly conscious of the health or condition of one's glandular system.

Transferring Elements:

1. An ATTITUDE of Introspection toward the condition of one's health.

2. An ATTITUDE of desiring the services of a reputable physician for any disorder that may seem to originate in the glandular system.

3. A REALIZATION of the value of periodic health examinations.

4. An ATTITUDE of desiring to avoid severe or prolonged emotional states because of their probable detrimental effect on bodily functions.

5. Vocalulary Central:
(a) an understanding of, or

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[39] Darlington: p. 250.
[40] Williams: Personal Hygiene Applied, p. 265.

(b) an intelligent use of, certain terms relating to the physiology and hygeine of the glandular system.

OBJECTIVE D

The Control of Normal Growth and Energy

This includes all desirable Controlling Outcomes relating to:

	HEALTH EDUCATION COMPLEX
1. Fresh Air	D-I
2. Sunshine	D-II
3. Drinking Water	D-III
4. Food	D-IV
5. Elimination of Body Waste	D-V
6. Work, Exercise and Play	D-VI
7. Correct Posture	D-VII
8. Sleep and Rest	D-VIII
9. Mental Habits	D-IX
10. Clothing (Selection)	D-X
11. Alcohol	D-XI
12. Tobacco	D-XII
13. Tea, Coffee, Cocoa	D-XIII
14. Narcotics and Other Drugs	D-XIV—1 & 2
15. Sex Function	D-XV

D-1. Desirable outcomes relating to fresh air.

Health Education Complex D-I
(Controlling System)

Controlling Outcome:

The HABIT of breathing sufficient fresh air at all times.

Elements of the Complex

Strengthening Elements:

1. The REALIZATION of the relative importance of air. (While all three are vital to life—we can live weeks without food, days without water, but only a few minutes without air.)

2. A REALIZATION that the value of fresh air is shown in its necessity, and use, in cases of illness, particularly pneumonia

and tuberculosis, two diseases that until recently have led all others in mortality.

3. The REALIZATION that the free circulation of fresh air is one of the most effective measures in the prevention of epidemic of diseases.

Counteracting Elements:

1. The HABIT, where family conditions permit, of sleeping one in a bed or one in a room, (to counteract undesirable overcrowding and consequent breathing of impure air).

2. The HABIT of using open window ventilation, vapor pans in connection with the heating system, or having potted plants indoors (in order to counteract excessive dryness in the atmosphere).

3. The HABIT of breathing through the nose (to counteract conditions of dust in the atmosphere).

4. A REALIZATION of some of the common sources of gaseous impurities in the air (and means of counteracting them):
(a) Pipe leaks in gas lines.
(b) Defects in gas fixtures.
(c) Carelessness in turning off gas.
(d) Improper Combustion.
(e) Leaking "mains" outside the house.
(f) Privy vaults, cesspools, etc.
(g) Automobile exhaust.
(h) Certain industries.

5. A REALIZATION of the harmful effect of dust in the air (e. g., tuberculosis is one-third greater among workers who are exposed to mineral dust), and the sources of dust:
(a) Animal matter
excretion from horses, dogs, etc.
sputem from humans, etc.
(b) Mineral matter
dirt from streets, building operations, etc.
(c) Vegetable matter
from garbage, etc.
(to counteract the breathing of air with dust impurities in it).

6. The HABIT, in industry, of wearing gas masks, handker-

chiefs, or other protective devices where excessive exposure to gases or dust is unavoidable (to counteract the harmful effects of going without masks or safety-devices).

Completing Elements:

1. The HABIT of spending as much time as possible out-of-doors.
2. HABITS relating to the breathing of fresh air when asleep—
(a) Sleep out of doors—sleeping porch, etc., if possible.
(b) If sleeping indoors—proper ventilation of bed-room at night.
3. A REALIZATION of the methods of ventilating bed-rooms and other types of rooms.
4. A REALIZATION that the amount of ventilation is dependent upon certain variable factors:
(a) The number of people in the room.
(b) The size of the room.
(c) The season of the year.
(d) The number of windows in the room.
(e) The direction and velocity of the wind, or breeze outside, if any.
5. The HABIT of exercising out-of-doors, where possible.
6. A REALIZATION that three favorable conditions for good ventilation should be:
(a) Moving, or circulating, fresh air.
(b) Proper temperature (68°).
(c) Approximately 60% humidity.
7. The HABIT of breathing correctly (deeply).
(See—respiratory system—C-4). (See—correct posture—D-7.)
8. The HABIT of wearing that is not too tight.
9. The REALIZATION that sleeping with the windows open is not so beneficial as sleeping on a porch.[41]
10. HABITS relating to the care of the respiratory system (see C-4).
11. The REALIZATION that deoradonts are not satisfactory remedies for impure air, but rather the correction of the condition (where possible) that causes the odor.

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[41] Darlington: Health and Efficiency, p. 30.

Limiting Elements:

1. The REALIZATION that while moving air is one of the requirements of good ventilation, one should avoid too much "moving air" in the form of drafts, particularly when warm or over-heated.

Transferring Elements:

1. An ATTITUDE of desiring to bring the fresh air indoors, where or when it is not possible for one to be out-of-doors.

D-2. Desirable outcomes relating to sunshine.

HEALTH EDUCATION COMPLEX D-II
(Controlling System)

Controlling Outcome:

The HABIT of securing the beneficial results of direct exposure to sunlight.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The REALIZATION that part of the splendid effect of out-of-door-life is due to the sunshine.

2. The REALIZATION that a careful and continued exposure to sunshine will result in

(a) Improved function of the skin, hair and nails.
(b) Increased nutritive changes.
(c) Enrichment of the blood.
(d) Improved nerve action.

3 The REALIZATION that animals (as well as primitive peoples, and the ancient Romans and Greeks) seem to appreciate the value of a sun-bath

4 The REALIZATION that among moderns there is a growing practice of sun-bathing, sun gymnasiums for sports, sun-baths on bathing beaches, etc.

5. The REALIZATION that sunlight kills disease germs and that it is one of the most effective of disinfectants.

6. A REALIZATION of the practical illustration of the value of sunlight introduced in the exposure of convalescents to sunshine, even though moderate.

7. A REALIZATION of the psychical, as well as the physical, effect of sunshine.

Counteracting Elements:

1. The REALIZATION that exposure to the sunlight should not be too sudden, too severe, nor too prolonged (to counteract sunburn, sun "poison," headache, sleeplessness and other undesirable effects of unwise exposure to the sun).

2. The HABIT of exposing the interior of the house to sunlight (to counteract mustiness).

3. The HABIT of protecting the head and eyes when taking a sun-bath (to counteract possibility of sun-stroke or injury to the eyes due to glare).

Completing Elements:

1. The REALIZATION that those unused to strong sunshine should gradually accustom themselves to exposure by:

(a) Gradually increasing the amount of skin exposed.

(b) Gradually increasing the length of time of exposure.

2. The REALIZATION that sunshine is composed of three kinds of rays:

(a) Rays of heat.

(b) Rays of light

(c) Rays having chemical properties, and the accompanying REALIZATION that each of these types or kinds of rays has beneficial effects (preventive or curative) on the human body.

3. The REALIZATION that rays of light have penetrative power—that they can extend their beneficial effects to the interior of the body.

4. HABITS relating to the care of the eye. (See COMPLEX C-1-a.)

5. OUTCOMES relating to sunstroke. (See COMPLEX G-9.)

6. The REALIZATION that sunlight, "through glass," is not as beneficial as direct sunlight.

7. A REALIZATION of the implications of the theory of photosynthesis—"ultimately the source of all energy for man is the sun."[42]

[42] Williams: Personal Hygiene Applied, p. 75.

Limiting Elements:

1. The REALIZATION that excessive sunlight is believed to be one of the causes of backwardness of the people in the tropical regions.

2. The REALIZATION that sunshine, like food or medicine, is beneficial if taken rightly or moderately, but that unwise indulgence is injurious.

Transferring Elements:

1. An ATTITUDE of desiring to have sunlight, in moderation, within the house.

2. An ATTITUDE of desiring to work, exercise, play, work or rest in the sunlight, whenever possible.

3. An ATTITUDE of desiring to consult a reputable physician before embarking on any course of sunlight treatment that is based on self-diagnosis or self-treatment.

D-3. Desirable outcomes relating to drinking water.

HEALTH EDUCATION COMPLEX D-III
(Controlling System)

Controlling Outcome:

The HABIT of drinking plenty of pure water.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The REALIZATION that one can live only a few days without water—that one can do without food for a longer time than one can do without water.

2. The REALIZATION that the body is composed of about 75% water by weight.

3. A REALIZATION of the nature of the cellular life-units of the human body, and the fact that these cells must constantly be bathed in water in order to be nourished and purified.

4. The REALIZATION that water helps to wash out the poisons and wastes from the body:

(a) Aids kidneys.

(b) Aids excretion through the pores.

(c) Softens excretion from large intestine.

5. The REALIZATION that water is the base of most of the important fluids of the body, and is a necessary component of all tissue.

6. The REALIZATION that the daily loss of water from the body, due to excretions of the four systems, amounts to several quarts a day and that this must be replaced constantly as the body has no way of storing up water for future use.

7. A REALIZATION of the value of water to living things as demonstrated by the effects of water on plants and flowers.

8. The REALIZATION that water is valuable for "internal cleanliness" as well as "external cleanliness."

9. The REALIZATION that water increases all secretions.

10. The REALIZATION that water is Nature's greatest solvent (taking food in solution to tissues, etc.).

11. The REALIZATION that water aids or increases peristalsis.

Counteracting Elements:

1. The HABIT of sipping (or drinking slowly) any water taken with meals (to counteract the habit of "washing the food down" with water).

2. The REALIZATION that the habit of drinking ice water in quantity is detrimental to the health (to counteract excessive drinking of icewater).

3. The HABIT, if one drinks ice water, of sipping it, or drinking it slowly (to counteract ill-effects of gulping ice water).

4. The HABIT of drinking water with meals, in moderation (to counteract excessive dilution of gastric and intestinal juices).

5. An ATTITUDE of distrust toward so-called "mineral waters" unless recommended by a reputable physician (to counteract any tendency to be deceived by misleading advertising claims, etc.). The normal person does not need them, the ailing one should consult his physician.

6. The REALIZATION that one should not drink too many cold soft drinks—(to counteract the soft-drink habit).

Completing Elements:

1. The REALIZATION that spring water which is generally

"surface" water and therefore subject to contamination, may or may not be pure, and a consequent ATTITUDE of doubt toward water from springs that have not been tested or analyzed.

2. The REALIZATION that wells should be so located and so constructed that they are protected against contaminating drainage.

3. The STANDARD of drinking at least two glasses of water between meals and one before retiring,[43] and of sipping a glass of water with each meal.

4. The ATTITUDE of demanding an adequate supply of pure water (cities and towns).

5. The HABIT of boiling water when its safety is questioned.

6. The HABIT of avoiding common drinking cups, etc.

7. A REALIZATION of the value of the presence of iodine in the water supply.

Limiting Elements:

1. The REALIZATION that "plenty" should not justify drinking an excessive amount of water—as, even food and medicine—in unwise quantities are injurious.

2. The REALIZATION that the amount of water one should drink varies:

(a) With the individual—some should drink more than others.

(b) With conditions:

(a) Weather, season of year, etc.

(b) Degree of activity.

(c) Amount of liquid (water) taken in foods, e. g., boiled cabbage.

Transferring Elements:

1. The REALIZATION that some (particularly those with organic trouble) should drink according to the recommendation of a physician—and the consequent REALIZATION of the value of periodic examination.

2. The HABIT (normal people) of drinking from six to eight glasses of water a day.

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[43] Some authorities believe that a glass of water immediately upon arising is better.

3. The ATTITUDE of desiring a pure water supply (either city or rural).

4. The ATTITUDE of desiring to have a chemical and bacteriological analysis made of a water supply that is not reliably known to be pure.

5. An ATTITUDE of suspicion toward water of unknown wells and springs.

6. An ATTITUDE of refraining from acts that might pollute the water supply of others.

D-4. Desirable outcomes relating to food.

HEALTH EDUCATION COMPLEX D-IV
(Controlling System)

Controlling Outcome:

The HABIT of eating a proper and sufficient supply of food under healthful or favorable conditions.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The REALIZATION that a proper and sufficient supply of food is a factor in success, contributing to:[44]

(a) Strength—physical, mental, nervous.

(b) Endurance.

(c) Harmonious working together of mental and physical elements.

(d) Poise.

2. The REALIZATION that a proper and sufficient supply of foods is necessary to one's happiness.

3. The REALIZATION that illness, with consequent financial and economic loss, is frequently attributable to a poor or insufficient supply of food.

4. The REALIZATION that it is from food that the body is constructed and the worn-out parts replaced.

5. The REALIZATION that the following health factors are dependent upon food:

(a) The growth of the body.

(b) The maintenance of the body.

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[44] Pa. State Course of Study, p. 51.

(c) The energy expended in work, play, etc.
(d) The body heat.
(e) The power to resist disease.

6. The REALIZATION that the great variety of cells and tissue within the body (bony, muscular, nerve, membraneous, etc.) requires a varied and balanced diet.

7. The REALIZATION that food has an influence on mental ability or capacity.

Counteracting Elements:

1. The HABIT of chewing the food thoroughly (to counteract poor mastication, and consequent indigestion).

2. The REALIZATION that too many sweets (candy and cake) are unhealthful (to counteract the "sweet-tooth" habit).

3. The HABIT of eating sweets—candy and cake—after meals or not at all (to counteract the habit of eating them between meals or just before going to bed).

4. The REALIZATION that cold milk is not as digestible as warm milk, particularly for very young children and babies (to counteract the habit of drinking cold milk).

5. The HABIT of avoiding drinking while food is in the mouth (to counter-act practice of "washing the food down").

6. The REALIZATION that one should not eat when greatly fatigued, or immediately after strenuous exercise (to counteract the ill-effects of the practice noted).

7. The REALIZATION that one should not eat heavily just previous to participating in any strenuous exercise—e. g., competitive athletics (to avoid illness thus caused).

8 The REALIZATION that one should confine one's eating to the regular meal-time, that eating between meals spoils the appetite and interferes with digestion (to counteract eating at irregular times)

Completing Elements:

1 The HABIT of arising in time to complete the toilet and eat a warm breakfast, without hurrying

2 HABITS relating to the care of the digestive system (See C-4).

3. HABITS relating to the care of the circulation. (See C-2).

4. HABITS relating to the care of the excretory systems. (See C-5).

5. HABITS relating to the care of the nervous system. (See C-6.)

6. The HABIT of drinking slowly. (See D-3).

7. The HABIT of eating one's meals at regular hours.

8. The HABIT of drinking some milk daily—children at least one quart (either as a beverage or in combination with other foods).

9. The HABIT of eating some fruit daily.

10. The HABIT of eating at least one green vegetable every day.

11. The HABIT of eating a suitable (warm) breakfast each morning.

12. The HABIT of washing the hands, and of presenting a generally neat and clean appearance at the table.

13. The REALIZATION that a knowledge of good table manners add to one's happiness and comfort when eating.

14. Certain HABITS relating to the observance of good table manners:

(a) Proper methods of using knife, fork and spoon.

(b) Proper methods—and amenities—in passing of food.

(c) Thinking of others before helping self.

15. An ATTITUDE of being willing to share one's food with others when necessary.

16. A REALIZATION of the chemical classes[45] of foods, and the necessity of having each class present in one's diet.

17. HABITS relating to the clean and healthful storage and preparation of food in one's home.

18. A REALIZATION of the value of national, state, and local pure food laws, regulation, inspection, etc.

19. The HABIT of eating some coarse grained foods daily.

20. The HABIT of eating bulky foods frequently.

21. The HABIT of being seated, and otherwise physically at ease, while eating.

22. HABITS relating to the eating of a healthful lunch, under

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[45] See Horace Mann, Course of Study, Grade V., pages 52 to 62, especially.

hygienic and comfortable conditions, varied to meet the individual needs:

(a) School boy or girl:
    (a) Lunch box—contents, packing, etc.
    (b) Lunch room—proper selection, etc.
(b) Workers:
    (a) Sedentary occupations
    (b) Occupations of physical activity

23. The REALIZATION that the amount and character of one's diet should be varied according to:[46]

(a) One's age, or degree of maturity.
(b) Season of the year.
(c) Amount of physical activity.
(d) Size of the body.
(e) Sex.
(f) State of health.

24. A REALIZATION of the relative values of the various methods of preparing foods, e. g., roasting, boiling, frying, etc.

25. REALIZATIONS pertaining to the comparison of relative costs and food values found in various types of foods.

26. The REALIZATION that particular care should be taken of the diet of babies and young children.

27. A REALIZATION of the meaning and value of "calories" and "vitamins."[47]

Limiting Elements:

1. The REALIZATION that one should not be so conscious or so selective of what they eat that they may become socially a nuisance to those around them.

2. The REALIZATION that Age-Height-Weight Tables are only approximate and should be further modified by a considera-

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[46] See U. S. Bureau, Health Education Series No. 2, and also Appendix N. of the Penna. State Course of Study (both of these may be found in the Appendix of the Health-Happiness-Success Series (pupils' texts) of Lyons and Carnahan, Chicago.

[47] See Horace Mann, Course of Study, Grades V and VI, pages 51 and 72.

tion of the physical type to which one belongs (short-stocky, average, or tall-slender).[48]

3. A REALIZATION of the significance of the statement that "more people have been killed by over-eating than by starvation."

4. A REALIZATION of the significance of the statement that "what is one man's meat is another man's poison."

5. The REALIZATION that a light "mid-morning" or "mid-afternoon" lunch for young children is not regarding as "eating between meals."

Transferring Elements:

1. An ATTITUDE of cheerfulness at meal-time.

2. An ATTITUDE of desiring to observe the principles of selection involved in a "balanced diet."

3. An ATTITUDE of learning to like and to eat all healthful and essential foods,—excepting those which may have, for the given individual, an undesirable or detrimental effect.

4. A REALIZATION of the causes of indigestion[49] and a consequent ATTITUDE of desiring to avoid them.

5. The HABIT of practicing moderation (in both food and drink).

6. The HABIT of patronizing only those stores, markets, dining places, etc., that are reputable and sanitary.

7. The STANDARD of maintaining one's weight at a normal figure—(Age-Height-Weight Tables).

8. An ATTITUDE of REALIZATION that one should consult a reputable physician rather than to attempt self-diagnosis and self-treatment relating to diet.

9. The REALIZATION that certain dietetic regulation is necessary in certain organic diseases, with the consequent REALIZATION of the value and necessity of periodic health examination.

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[48] Such a modification has been worked out by the Director of Physical and Health Education, Phila. Public Schools, based on the Baldwin-Wood Table. Apply to him or see Appendix of Health-Happiness-Success Series, Lyons and Carnahan, Chicago.

[49] See Williams: Personal Hygiene Applied, p. 190.

D-5. Desirable outcomes relating to the elimination of bodily waste.

Health Education Complex D-V
(Controlling System)

Controlling Outcome:

The HABIT of prompt and regular elimination of bodily waste.

Elements of the Complex

Strengthening Elements:

1. A REALIZATION that the body is like a furnace, (a) furnishes heat and energy, (b) but ashes must be removed regularly or efficiency is impaired.
2. The REALIZATION that waste unremoved poisons the body in many ways, and is a cause of many of the diseases of old age.
3. A REALIZATION of the meaning of the implications of the saying that "A man is as old as his arteries."
4. The REALIZATION that tremendous number of people suffer the ill-effects of constipation and resulting complications; that headache, biliousness, "tired feeling" in children are often the results of constipation.

Counteracting Elements:

1. The HABIT of avoiding the use of drugs and medicines by fresh air, bathing, exercise, diet and regularity of habit (to counteract unwise use of drugs and medicines, i. e., not recommended by a reputable physician).

2 The REALIZATION that too frequent use of "physic" is harmful (to counteract the habitual use of "physic").

3 The ATTITUDE of desiring to correct the fundamental condition which causes constipation, rather than to mitigate its effects by the taking of "physic" and laxatives (to counteract the habitual use of "physic").

4 The REALIZATION that nature will not continue to warn those who disregard her signal (bowel movement)—(to counteract the bad habit of postponing a bowel movement).

5 The HABIT of eating a "balanced diet," being particular

to include fruit, fresh vegetables and bulky foods (to counteract the habitual use of "physic").

6. The HABIT of avoiding the excessive use of certain foods of binding effect (to counteract the undesirable use of these foods) e. g., cheese, etc.

7. The ATTITUDE of demanding decent conditions in school toilets (to counteract the abuse of school toilets).

Completing Elements:

1. The ATTITUDE of being willing to take the time to attend to natural needs (elimination) before going anywhere, school, church, social visits.

2. The HABIT of immediate observance of and response to "natural calls."

3. The HABIT of having a bowel movement at a regular time each day.

4. The HABIT of eating rough or bulky foods as aids to elimination.

5. The HABIT of eating green vegetables as aids to elimination.

6. The HABIT of eating fresh fruit as an aid to elimination.

7. The HABIT of going to toilet at recess time each day.

8. The HABIT of taking a warm bath at least once a week. (See A-4.)

9. The HABIT of breathing fresh air at all times (day and night. (See D-1.)

10. The ATTITUDE of desiring to obtain the best toilet and bath facilities possible.

11. The HABIT of drinking plenty of pure water between meals. (See D-3.)

12. The REALIZATION that loose porous clothing is an aid to the ventilation of the body and hence to elimination through the skin.

13. The HABIT of exercising regularly and moderately.

14. The HABIT of eating moderately of a varied diet.

15. The HABIT of emptying bladder before retiring and on arising.

16. A REALIZATION of the particular danger attendant upon the following of sedentary occupations and professions.

Limiting Elements:

1. The REALIZATION that cold water should be sipped rather than drunk in large quantities.
2. The REALIZATION that water at meals should not be used to "wash the food down."
3. The REALIZATION that water should not be used in too great quantities at any time.
4. The REALIZATION that excessive bathing in warm water is weakening and dangerous.

Transferring Elements:

1. A REALIZATION of the need and value of periodic medical examinations.
2. An ATTITUDE of INTROSPECTION toward the condition of one's excretory systems.
3. An ATTITUDE of desiring competent medical advice and treatment rather than of depending upon patent medicines for the treatment of chronic constipation.

D-6. Desirable outcomes relating to work, exercise, and play (physical activity).

HEALTH EDUCATION COMPLEX D-VI
(Controlling System)

Controlling Outcome:

The ATTITUDE of desiring to properly regulate one's habits of work, exercise, and play (physical activity).

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The REALIZATION that "work" is not a burden but a gift, and an opportunity for happiness.
2. The REALIZATION that work, exercise, and play in proper proportion are necessary to the moral as well as the physical development of man.
3. The REALIZATION that work, exercise, and play are all

forms of physical activity, not remotely connected in essence:

Work can be "play" to some.

Play can be work—(serving a useful purpose).

Exercise may be either "work" or "play."

Work or play may be exercise.

In many cases, the difference or the likeness exists only in the mental attitude involved.

4. The REALIZATION that beauty of form comes through development resulting from physical activity.

5. A REALIZATION of the valuable by-products that may result from these forms of physical activity—strength, endurance, skill, courage, presence of mind, pose, leadership, etc.

6. A REALIZATION of meaning of the maxim: "A sound mind in a sound body" (mens sano in corpore sano).

7. The MOTIVE (example) of the great figures of the world's history as illustrating any or all of these three types of physical activity.

Counteracting Elements:

1. The REALIZATION of those whose work is of a sedentary character should make a special point to secure the necessary physical activity through exercise or play (to counteract the ill effects on the body of physical inactivity).

2. The REALIZATION that those whose work is of an active physical nature can secure their recreation through "play" that is more in the nature of mental diversion—like watching a baseball game, etc. (to counteract the possibility of over-exertion or exhaustion).

3. The REALIZATION that play affords (or should afford) relief from worry and nerve-strain (to counteract nervous tension, etc.).

4. The REALIZATION that hard intensive work also affords opportunity for forgetfulness of self (to counteract habit of worrying, etc.).

Completing Elements:

1. The REALIZATION that one's energy and endurance depends on

(a) Food.

(b) Power to convert food into energy.
(c) Ability to remove waste rapidly.

2. Desirable HABITS relating to food. (D-4).

3. HABITS relating to Sleep and Rest. (D-8).

4. Desirable HABITS relating to Fresh Air, Sunshine, Drinking Water. (D-1, 2, 3).

5. Desirable HABITS relating to the Elimination of Waste. (D-5).

6. The REALIZATION that for effective work or play, one must have his physical defects corrected.

7. HABITS relating to play:[50]

(a) Place:
- (a) Out-of-doors.
- (b) School yard or playground.
- (c) Not in street, or dangerous places.
- (d) Avoiding running in, or into, the street.
- (f) Ask parents' permission before play.

(b) Time:
- (a) At recess (learn to play with others).
- (b) After school, for at least an hour.
  - In summer, avoid hot sun.
  - In winter, while sun is strong.
  - Dress warmly.
  - Keep warm by playing and jumping.

(c) Manner:
- (a) Not too hard just after a meal.
- (b) Not too hard nor too long.
- (c) Self-controlled—not too excitable.
- (d) Away from danger.
- (e) Play fairly.

(d) Safety First—(See Objective F—The Control of Accidents).

8. HABITS relating to work:

(a) Energy.
(b) Cheerfulness.
(c) Perseverance.
(d) Pride in achievement.

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[50] Burkard, Chambers, Maroney, Book, I, p. 202.

(e) Doing a good turn for others.
(f) Ambition.

9. HABITS relating to Exercise.
(a) All-around development (see C-8 and C-9).
(b) Execute commands promptly.
(c) Cultivate a proper mental attitude.
(d) Special remedial exercises for certain physical defects.

Limiting Elements:

1. A REALIZATION of the significance of the maxim: "All work and no play makes Jack a dull boy"—and of the converse —"All play and no work makes Jack a dull boy."

2. The REALIZATION that "to properly regulate" is to be interpreted as a judicious amount of each (Work, Exercise, Play), none to excess, nor to the exclusion of any others.

3. The REALIZATION that the degree of physical activity in work or play must be watched closely and abated somewhat as one grows older.

Transferring Elements:

1. A REALIZATION of the value of a medical examination before indulging in strenuous exercise or work.

2. An ATTITUDE of self-control and moderation in all types of physical activity.

3. An ATTITUDE of desiring a happy alternation or balance of Work, Exercise, and Play.

4. The ATTITUDE of desiring to work under healthful conditions.

5. An ATTITUDE of desiring to take one's recreation in a way that will not jeopardize the health or safety of one's self or of others.

6. An ATTITUDE of desiring a well-rounded physical development.

D-7. Desirable outcomes relating to correct posture.

HEALTH EDUCATION COMPLEX D-VII
(Controlling System)

Controlling Outcome:

The HABIT of practicing correct posture.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The REALIZATION that correct posture may not only indicate a mental state, but that it may have a distinct influence on one's mental states.[51]

2. The REALIZATION that correct posture, particularly in physical activity, seems to give added strength to the body, due possibly to a better distribution of weight.

3. A REALIZATION of the attractiveness of correct posture, in others, and to others.

4. A REALIZATION of the values of correct posture:

(a) Physical. (Better functioning of organs, etc.).
(b) Mental. (See 1, above).
(c) Social. (Personal attraction, etc.).
(d) Economic or Financial. (Helps to get a good job, or a better one).

Counteracting Elements:

1. A REALIZATION of ill-effects of incorrect posture (to counteract habits of poor posture):

(a) Mental—frequently associated with a lack of self-respect.
(b) Social—people often regard poor posture as an index of lack of character.
(c) Financial—lack of good presence—hard to get a good job, hard to keep a job.
(d) Physical:
    (a) Decreases size of chest cavity.
    (b) "Doubles" or cramps vital organs, interfering with bodily functions, e. g., the intestines and bowel elimination.
    (c) Cramping of organs causes pressure on important blood-vessels in the abdomen, which interferes seriously with the nutrition and function of digestive and other vital organs.
    (d) Tends to cause deformities of the back or spine.[52]
    (e) Decrease in skeletal and muscular strength.

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[51] This may be noted in the attitude of increased attention that comes from drawing one's self up, when sitting or standing.

[52] Common among typists.

2. A SENSING of discomfort when sitting in chairs that do not fit, and SENSINGS of discomfort on assuming an incorrect posture (to counteract tendency to relax into poor posture).

3. The HABIT, when doing close work of any kind—or when seated engaged in any activity that might cause one to relax into poor posture—of "straightening up" the back, trunk, and shoulders (to counteract incorrect posture due to unconscious relaxation).

4. The HABIT of "stretching" occasionally (to counteract cramped or prolonged postures).

Completing Elements:

1. A REALIZATION of the essential physical elements of good posture with the accompanying REALIZATION that it is in addition to all of that the expression of an inner spirit, which we call poise.[53]

2. An ATTITUDE of self-respect and optimism.

3. The HABIT of sitting in chairs that are conducive to good posture.

4. REALIZATIONS relating to a knowledge of the external forms of correct posture when:

(a) Standing.[54]
(b) Walking.[54]
(c) Sitting.[54]
(d) Lying down.[55]
(e) Running (sprint or distance).[56]
(f) Playing games or when participating in sports.[56]

5. The HABIT of wearing loose and non-restrictive clothing.

6. Desirable HABITS relating to Food (D-4), Fresh Air and Sunshine (D-1 and 2), Elimination of Waste (D-5), Work, Exercise, and Play (D-6), Sleep and Rest (D-8), Mental Habits

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[53] Expression of this in the highest form may be found in art, past and present, in sculpture—Winged Victory, Patria, The Discus-Thrower, etc. and in painting. It may also be noted frequently in outstanding physical types, champions in various lines of sport, etc.

[54] Phila. Course, Grades 1 to 6, pages 67 and 68.

[55] Williams: Personal Hygiene Applied, p. 146 and 147.

[56] Spalding's "Guides" to various sports; Stecher: Games and Dances (McVey); and others.

(D-9), Alcohol and Tobacco (D-11 and 12), and other hygienic factors.

Limiting Elements:

1. The REALIZATION that since "correct posture" or "poise" is frequently the expression of a mental attitude, it probably cannot be completely defined in terms of physical expression.

2. The REALIZATION that one should not be too self-conscious about one's posture so that it becomes extreme or artificial, and hence awkward.

3. The REALIZATION that "stretching" is not acceptable in formal gatherings, even when bored.

Transferring Elements:

1. An ATTITUDE of desiring to practice correct posture on all occasions.

2. An ATTITUDE of desiring to avoid certain typical forms of poor posture:[57]

(a) Standing (weight) on one foot.
(b) Hands in pockets.
(c) Folded arms.
(d) Weight carrying habitually on one side only.
(e) Resting chest against desk.
(f) "Slouching"—in seat, or walking.

3. A wholesome ATTITUDE toward the spiritual aspects of life.

D-8. Desirable outcomes relating to sleep and rest.

HEALTH EDUCATION COMPLEX D-VIII
(Controlling System)

Controlling Outcome:

The HABIT of getting sufficient sleep and rest under healthful conditions.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The REALIZATION that sleep is the best form of rest.

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[57] Penna. State Course of Study, p. 55.

2. The REALIZATION that sleep is the period of growth and repair of worn-out tissues.

3. The REALIZATION that sleep is the resting-time of consciousness, of voluntary muscles, and of the special senses (especially the eyes).

4. The REALIZATION that sleep helps to raise the level of one's resistance to disease.

5. The REALIZATION that sleep is one of the best of medicines,[58] and assists greatly in the cure of disease.

6. The REALIZATION that sleep is more necessary than food—an animal may live more than three weeks without food but only four or five days without sleep.

7. A REALIZATION of the significance of the fact that, as a general rule, the amount of sleep varies inversely with the rate of growth.

8. The REALIZATION that sleep is the great cure for worry.

9. The REALIZATION that experiments show that "animals become anaemic with loss of sleep," and "that with prolonged loss of sleep actual degenerative changes take place in the brain and the spinal cord."[59]

10. The REALIZATION that lack of sufficient sleep decreases one's ability to do mental work or physical work well.

Counteracting Elements:

1. A REALIZATION of the principal causes of sleeplessness[60] (to counteract insomnia by remedied treatment of the specific cause of sleeplessness):

(a) Cold Feet
(b) Worry
(c) Hunger
(d) Indigestion
(e) Over-eating
(f) Improper covering
(g) Sleeping in a strange bed

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[58] Darlington: Health and Efficiency, p. 95.
[59] *Ibid.:* pages 97 and 98.
[60] Darlington: Health and Efficiency, p. 100.

(h) Over-fatigue
(i) Pain
(j) Illness
(k) Over-excitement
(l) Intense concentration
(m) Eye-strain

2. The consequent REALIZATION that remedy for sleeplessnes is to remedy the cause (to counteract sleeplessness).

3. A REALIZATION of the proper cure for each of the above, under 1. (to counteract the causes indicated).

4. The REALIZATION that a nap immediately after a meal often interferes with digestion, although it may be necessary for old people or young children (to counteract the practice indicated).

Completing Elements:

1. Desirable HABITS relating to Work, Exercise, and Play. (See D-6.)

2. The HABIT of eating a light evening meal, never less than two hours before retiring.

3. Good Mental HABITS. (See D-9.)

4. Desirable HABITS relating to the Nervous System. (See C-6), the Digestive System (C-3), etc.

5. The HABIT of sleeping in darkness.

6. The HABIT of sleeping alone, where possible.

7. The HABIT of sleeping with windows open, or on a sleeping porch.

8. The HABIT of sleeping in a quiet place—where possible.

9. The HABIT of retiring at a regular time.

10. Desirable HABITS relating to the cleanliness of the bedroom:

(a) Simplicity of furniture.
(b) Few ornaments.
(c) Unobtrusive paper—walls and ceiling.
(d) Airing bed-clothes.
(e) Hanging up clothing to air.

11. The HABIT of removing all "day clothing" and of sleeping in night clothes.

12. The HABIT of being well-covered, but not too warmly.

13. Certain HABITS relating to the toilet, to be attended to before retiring:

(a) Eliminating of body waste.
(b) Washing face and hands (or taking a warm bath).
(c) Arranging, or brushing the hair.
(d) Brushing the teeth, and rinsing the mouth.

14. Certain HABITS, relating to the toilet, to be attended to immediately after arising:

(a) A glass of water.
(b) Elimination.
(c) Washing or bathing (tub, shower or sponge, cool or cold).
(d) Hair.
(e) Teeth.

15. The REALIZATION that the body should be covered lightly when taking a nap.

Limiting Elements:

1. The REALIZATION that drowsiness is not always a sign of lack of, or need of, sleep. It may be the danger signal of some organic or systemic trouble requiring the services of a physician.

Transferring Elements:

1. Certain STANDARDS (IDEALS) for hours of sleep:[61]

(a) Adults (over 18)—8 or 9 hours
(b) Youths (16 to 18)—9 or 9½ hours
(c) Children (14 to 16)—9½ or 10 hours
(d) Children (12 to 14)—10 or 10½ hours
(e) Children (10 to 12)—11 or 11½ hours[62]
(f) Children (8 to 10)—11½ or 12 hours[62]
(g) Children (6 to 8)—12 or 13 hours[62]
(h) Children (4 to 6)—13 or 14 hours[62]

2. The great REALIZATION that sleep is largely a HABIT and that the conditions surrounding sleep should conform to the principles of habit formation.

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[61] After Williams: Personal Hygiene Applied, p. 339.
[62] Includes short afternoon nap or rest.

3. The REALIZATION that unusual conditions often arise that make modification of the STANDARD allowances advisable.
4. The STANDARD (for all) of arising at 7:00 A. M.
5. An ATTITUDE of desiring to observe the conditions necessary to healthful sleep and rest.
6. An ATTITUDE of desiring the diagnosis of a reputable physician if one is unable to sleep well.

D-9. Desirable outcomes relating to mental habits.

HEALTH EDUCATION COMPLEX D-IX
(Controlling System)

Controlling Outcome:

An ATTITUDE of desiring to secure the maximum of happiness and health made possible by the exercise of good mental habits.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. A REALIZATION of the physical value of good mental habits.
2. A REALIZATION of the spiritual value of good mental habits (increased happiness in life, satisfaction in success and achievements, etc.).
3. A REALIZATION of the social value of good mental habits (attractiveness of personality, wholesome friendships, leadership, etc.).
4. A REALIZATION of the economic value of good mental habits (efficiency and success in professional or business life).
5. A REALIZATION of the nature and value of habit formation as applied to MENTAL HABITS.
6. The MOTIVE (imitation, emulation) of following the splendid example of a good teacher, parent or relative, or historical or temporary hero or heroine.
7. A REALIZATION of the influence of disturbances of the cerebro-spinal nervous system upon the autonomic nervous system. (See COMPLEX C-6.)
8. A REALIZATION of the influence of disturbances of the

autonomic nervous system upon the cerebro-spinal nervous system. (See COMPLEX C-6.)

9. A REALIZATION of the power of the mind over the body.[63]

Counteracting Elements:

1. A REALIZATION of the physical damage done to one's brain, interference with vital processes, etc., by emotional extremes[64] (to help to counteract the indulgence in emotional extremes).

2. A REALIZATION that among undesirable emotional extremes may be classed:

Habitual, extreme, or prolonged fear, anger, jealousy, worry, grief, excitement, intolerance, selfishness, pessimism, discontent, indecision, morbidity, irritableness, suspiciousness, etc.[65]
(to counter indulgence in the undesirable mental states indicated).

3. OUTCOMES, additional to (1), to assist in counteracting undesirable mental states:

(a) The HABIT of associating with good companions—(and the necessary REALIZATION of what constitutes a "good" companion or friend).

(b) The HABIT of reading good books and the REALIZATION of the characteristics of "good" books.

(c) The HABIT of listening to, or participating in good songs and good music—with the REALIZATIONS that enable one to discriminate between good and poor.

(d) A REALIZATION of the value of a wholesome hobby or avocation for the wise employment of leisure time.

(e) The HABIT of participating in wholesome out-of-door recreation and play. (See COMPLEX D-6.)

(f) The HABIT of securing sufficient sleep and rest. (See COMPLEX D-8.)

(g) A REALIZATION of the value of using, or following, certain formulas to counteract worry, e. g.,

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[63] For instances, see Darlington, pages 250 and 251.
[64] Burnham: The Normal Mind, p. 403.
[65] Detroit Course in Health Instruction, pages 124 and 125.

(a) Question: "Is it *my* concern?"
(b) Question: "Is it my concern *now?*"
(c) If so, *do* something about it *now.*

(h) The REALIZATION that "one should not accept hurry as a necessary part of modern life."[66]

(i) The HABIT of resting when feeling tired, irritable, or worried.

(j) The HABIT of looking at things in their proper perspective.

4. The HABIT of making practical and decisive judgments and of acting upon them (to counteract HABITS of "day-dreaming",[67] indecision, etc.), with the counterbalancing REALIZATION that decisions and judgments should not be regarded as irrevocable but rather subject to revision later if needed in the light of new evidence or additional knowledge.

5. HABITS of rendering service to others (to counteract undesirable mental states involving "too much ego in the cosmos,"[68] by absorption in activities that foster forgetfulness of self).[69]

Completing Elements:

1. The REALIZATION that the emotions are not to be suppressed, but rather guided and modified by intelligence.

2. HABITS relating to efficiency:—careful observation, planning, despatching, etc.

3. HABITS relating to the psychology of learning.[70]

4. A SENSE of humor.

5. An ATTITUDE of sincerity towards life and toward one's associates.[71]

6. An ATTITUDE of self-reliance.[72]

7. An ATTITUDE of patience.

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[66] Burnham: The Normal Mind, p. 403, (after Riggs.)
[67] See Report of Joint Committee, p. 63, (5).
[68] Kipling: Bimi.
[69] Wells, H. G.: Outline of History, 3rd Ed., pages 361 and 362, in commenting on religion, religious leaders, and the philosophy of religion.
[70] See Thorndike, Whipple, Judd, Freeman and others.
[71] Report of Joint Committee, p. 63 (3).
[72] Report of Joint Committee, p. 63, (6).

8. The HABIT of doing one thing at a time (concentrating on the present task).[73]

9. The HABIT of giving due regard to all of the hygienic factors in life, in order to provide the proper physical basis for good mental habits.

10. In particular the HABIT of taking proper care of the nervous system. (See C-6.)

11. The HABIT of practicing correct posture.[74] (See D-7.)

Limiting Elements:

1. A REALIZATION of the inevitable imperfection of human life, character and conditions—in the words of Burnham (P. 672): "to avoid breaks in character, breaks between your ideals and your everyday actions, recognize that your problem is fundamentally the same as every one else's, no matter what your particular job may be. . . . Do not criticize your part in the play,—study it, understand it, and then *play* it, sick or well, rich or poor, with *faith*, with *courage*, and with proper *grace*."

Transferring Elements:

1. The ATTITUDE: "If a thing has to be done, *like* to do it."[75]
2. An IDEAL of "a sound mind in a sound body."
3. IDEALS of self-control and good character.
4. IDEALS of a proper balance of activities—proportion and alternation of work, play and rest.
5. IDEALS of altruism and of service to others.
6. The REALIZATION that "our success in life is greatly dependent upon our mental attitudes—upon our reactions to and control of emotions."[76]
7. ATTITUDES indicating "right qualities of mind; self-control, resolution, contentment, unselfishness, optimism, confidence, reasonableness, cheerfulness, determination."[77]

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[73] Report of Joint Committee, p. 63, (4).
[74] Horace Mann: p. 78.
[75] Horace Mann: Tentative Course, Grades 1 to 6 (Wood & Strang), p. 68.
[76] Detroit, Course on Health Instruction, Grades 1 to 6, p. 124.
[77] Detroit, Course on Health Instruction, Grades 1 to 6, p. 125.

D-10. Desirable outcomes relating to the selection and wearing of clothing.

HEALTH EDUCATION COMPLEX D-X
(Controlling System)

Controlling Outcome:

The HABIT of wearing suitable clothing.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. A REALIZATION of the value of proper clothing for one's physical health.
2. A REALIZATION of the value of proper clothing for one's mental comfort and satisfaction.
3. A REALIZATION of the social value of proper habits of dress.
4. A REALIZATION of the economic or financial value of proper habits of dress, e. g., "Appearance does count!"

Counteracting Elements:

1. The HABIT of wearing special clothes, or uniforms, for play or recreation (to counteract possibility of soiling or tearing one's regular clothing, and also to counteract the restrictions imposed by wearing clothing not suited for use in rough play or sports).
2. The HABIT of wearing clothing that is not too tight—hat-bands, waistbands, collars, suspenders, belts, hose, garters, etc.—(to counteract possibility of interference with the circulation).
3. The HABIT of wearing properly fitting shoes[78]—see C-9—(to counteract ill-effects on circulation and also to counteract the possibility of causing foot defects, either skeletal or muscular).
4. The REALIZATION of the supreme importance of keeping the baby's clothing loose (to counteract possible physical ill-effects and discomfort to the baby).
5. The REALIZATION that habits of improper clothing—too warm, too cold, damp or wet, lower the body resistance to disease, rendering us particularly susceptible to diseases of the respiratory tract—colds, pneumonia, tuberculosis, etc. (to counteract possibility of contracting the ailments noted).

6. The ATTITUDE of desiring to avoid getting wet and the HABIT of removing damp clothing as soon as possible[78] (to counteract the possibility of catching cold).

7. The REALIZATION that one should avoid wearing stockings or socks—and shoes—that are too short (to counteract possibility of ingrowing toe-nails and other foot-ills).

8. The REALIZATION that it is advisable to "change" the under clothing more frequently in the summer than in the winter (to counteract possibility of being unclean, body odor, etc.).

9. The HABIT of wearing collars ¼ size larger than the neck band of the shirt (to counteract constriction of surface blood-vessels of neck due to too tight collars).[79]

10. The HABIT of changing socks and stockings frequently, especially in the summer (to counteract fatigue and perspiration).

11. The HABIT of alternating pairs of shoes in use (to counteract foot-fatigue, perspiration, etc.).

Completing Elements:

1. The HABIT of changing clothing whenever it gets wet through:

(a) Exposure to weather.
(b) Excessive perspiration.

2. REALIZATIONS (and HABITS) relating to the proper care of clothing:[80]

(a) Washing
(b) Drying
(c) Pressing
(d) Storing

3. REALIZATIONS (and HABITS) relating to the suitability of different materials to the various seasons and to the various types of weather:

(a) Silk
(b) Linen
(c) Cotton
(d) Wool
(e) Fur
(f) Rubber

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[78] See also Horace Mann, Course of Study, pages 72 and 73.
[79] Williams, Personal Hygiene Applied, p. 302.
[80] See Penna. State Course of Study, p. 45.

4. The HABIT of washing the clothes when soiled.

5. The HABIT of using "hangers" for clothes not in actual use.

6. The HABIT of "airing" night clothing during the day.

7. The HABIT of "airing" day clothing during sleep.

8. The HABIT of wearing night clothing during sleep.

9. The HABIT of coming to school—or of going anywhere—with clothes as clean as possible.

10. The HABIT of dressing, in the morning, with an eye to the weather outside.

11. The HABIT of wearing appropriate outer clothing—overcoats, furs, rubbers, etc.

12. A REALIZATION of certain STANDARDS[81] for the judging of clothing with reference to health values:

(a) Weave

(b) Weight

(c) Power to absorb moisture.

(d) Power to conserve or conduct heat.

13. The REALIZATION that dark colors are best for winter wear, and light colors for summer wear.

14. The HABIT of keeping one's shoes polished, and—when not in actual use—in shoe trees, or the equivalent.

15. A REALIZATION of the properties of the various materials suitable to the varied seasons—for

(a) Outer clothing.

(b) Under clothing.

(c) Night clothing.

and of their cost compared to their respective hygienic and comfort giving values.

16. The REALIZATION that it is better to have the weight of the clothing suspended from the shoulders than from the waist.[82]

Limiting Elements:

1. The REALIZATION that clothing should be comfortable in fit, neither too tight nor too loose.

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[81] Teaching Health in High School, p. 37.

[82] Washington, D. C., Course of Study, 5B Grade, pages 49 and 50.

2. The REALIZATION that there is "a time and a place for all things" and the application of this principle to the wearing of appropriate and seasonable clothing, e. g., sweaters, overshoes, mufflers and other warm wraps should not be worn indoors.

3. The REALIZATION that one should not be ashamed, and should not cause others to be ashamed, of clothing that is merely old or worn.

(a) If it is the best that one can reasonably afford.

(b) If it is kept clean and neat.

4. The REALIZATION that one should dress for the season or the weather rather than for style.[83]

5. The REALIZATION that it is more important that clothing should be neat and clean than that it should be new.

6. The REALIZATION that one should not be so conscious of one's clothing that it causes embarrassment or annoyance to self, or others.

Transferring Elements:

1. An ATTITUDE of being conscious of the acceptability (social) and the suitability (hygienic) of one's clothing, and of one's practices relating to clothing.

D-11. Desirable outcomes relating to the drinking of alcoholic beverages.

HEALTH EDUCATION COMPLEX D-11
(Controlling System)

Controlling Outcome:

An ATTITUDE of desiring to abstain from the use of alcoholic beverages.[84]

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The REALIZATION that one's opportunities for success and achievement are probably increased by total abstinence from alcoholic beverages.

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[83] Teaching Health in High School, p. 37.

[84] The Report of the Joint Committee treats under one heading (Alcohol and Other Narcotics): Alcohol, tea, coffee, coca-cola, cider, tobacco, habit-forming drugs, patent medicines.

3. The REALIZATION that many firms and business men prefer those who are total abstainers for responsible positions; in some instances, any position.

4. The REALIZATION of the significance of the fact that the great majority of athletes, amateur of professional, are total abstainers—at least during the training period, or during the period of active competition or performance.

Counteracting Elements:

1. The HABIT of drinking milk with one's meals—for children of foreign born parents coming from countries where the custom is to serve all, young and old, wine with their meals (to counteract the custom noted above).

2. A REALIZATION of the dangers (blindness, poisoning and death) frequently attending the drinking of "boot-leg" liquor.

3. The REALIZATION that "alcohol is a distinct protoplasmic poison."[85]

4. A REALIZATION that statistics of insurance companies show that even moderate users of alcoholic beverages have a much lower expectancy of life.[86]

5. A REALIZATION of the harmful physical effects of the use of alcohol—based on reliable scientific experimentation:

(a) Lowers resistance to disease.
(b) Increases susceptibility to disease.
(c) Increase pulse-rate.
(d) Lowers the blood-pressure.
(e) Impairment of neuromuscular acts.
(f) Injury of male germ cells.
(g) Causes increased load on the kidneys.
(h) Causes increased irritability (nervous system).
(i) Causes higher nerve centers to lose control.
(j) Undesirable effects on circulation and digestion.
(k) Flushed skin (red nose).

6. REALIZATIONS relating to alcohol as a causative factor in social and economic evils:

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[85] Williams: Personal Hygiene Applied, p. 198.

[86] Fisher & Fink: How to Live, p. 307 quotes 86 per cent increase of mortality of users over non-users.

(a) Mistreatment of and brutality to women and children.
(b) Crimes.
(c) Immorality.
(d) Economic loss—through diversion of money that should more properly be spent on food, clothing, shelter and the rearing and education of children (to counteract any tendency to use alcoholic beverages).

7. A REALIZATION of the close relationship existing between the use of alcohol and insanity[87] (to counteract any tendency to use alcoholic beverages):

(a) That a number of mental diseases are caused by the habitual —even though moderate (not to intoxication) use of alcohol.
(b) That "30% of the men and 10% of the women admitted to State Hospitals (for the insane) are suffering from conditions due directly or indirectly to alcohol."

8. A REALIZATION of the fact that alcohol causes a marked decrease in one's efficiency—neuromuscular control (to counteract any tendency to use alcoholic beverages).

9. The REALIZATION that one of the great dangers in drinking lightly or moderately is the fact that like all bad habits, it has a tendency to increase into intemperance (to counteract the tendency to excuse, or indulge in, moderate drinking of alcoholic beverages).

10. The REALIZATION that the one who partakes of alcoholic beverages is often exposed by the practice to undesirable companionship or environmental conditions (to counteract the tendency to use alcoholic beverages).

11. A REALIZATION of the application of the old adage: "Curiosity killed the cat" (to counteract the tendency to take the first drink—to see what it tastes like).

Completing Elements:

1. The REALIZATION that the doctrine or principle of so-called "interference with personal liberties", as applied against the Prohibition Amendment, is a fallacious one, as no individual

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[87] See Pamphlet on causes of insanity, prepared by Committee on Mental Hygiene of the State Charities Aid Association (N. Y.)

has any liberty that out-weighs the welfare of the social body or group.

2. The REALIZATION that the sale of alcoholic beverages in the United States under previous conditions had the characteristics of a social evil, and that there was justification for placing the liquor traffic under government restraint, just as there exists justification for the restraint of traffic in drugs (cocaine, morphine, etc.).

3. The ATTITUDE of not desiring to tempt others to break the law.

4. The HABIT of observing the law one's self.

5. The REALIZATION that the Prohibition Amendment, and the Volstead Act are the valid and enforceable acts of the majority, as provided for in the Constitution of the United States.

6. An ATTITUDE of contempt for those who are profiting from the manufacture and traffic in boot-leg liquor.

7. The REALIZATION that the Prohibition Amendment was probably passed not to "save man from himself" but to protect society.

8. The REALIZATION that advocates of the "light wines and beer" movement are without scientific evidence of the proof of their contentions.

9. The REALIZATION that "alcohol is not a food as it burns too fast for the human machine."[88]

10. The REALIZATION that alcohol by deadening the highest nerve centers, removes the power to inhibit and so releases the lower instincts to control the individual's behavior.

11. The REALIZATION that alcohol with its undesirable effects is often the base of patent medicines.

Limiting Elements:

1. The REALIZATION that alcohol for medicinal purposes should be taken only upon the prescription of a reputable physician.

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[88] Williams: Personal Hygiene Applied, p. 338.

Transferring Elements:

1. The REALIZATION that the excessive use of alcohol tends to undermine the family and home life.

2. A REALIZATION of the dependence of the safety of self and others upon abstinence from alcoholic beverages (reckless driving of automobiles and other vehicles, accidents in industry, etc.).

3. The REALIZATION that the question of alcoholic beverages will not be settled by laws or prohibition, but by education.

4. An ATTITUDE of giving the same intelligent support to the Prohibition Amendment and its enforcement acts as we give to all needful social legislation, particularly that relating to narcotics and the exploitation of women and children.

D-12. Desirable outcomes relating to the use of tobacco.

HEALTH EDUCATION COMPLEX D-XII-1
(Controlling System)

Controlling Outcome:

An ATTITUDE of desiring to abstain from the use of tobacco.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The MOTIVE of desiring to be courteous to others. (Tobacco smoke and practices incidental to the use of tobacco are often a source of discomfort and annoyance to others who may be present).

2. The REALIZATION that the practice of smoking often results in fires that burn the smoker or others, or in damage and loss of property.

3. The REALIZATION that many employers prefer non-smokers, because of the probability of their greater efficiency.

4. The REALIZATION that money spent on smoking can generally be more profitably expended on other things—investments, gifts, clothes, vacation expenses, education, outdoor sports and other healthful forms of recreation.

Counteracting Elements:

(to counteract the use, habitual or otherwise, of tobacco)

1. The REALIZATION that "spitting" is both injurious and disgusting—and the only other alternative (swallowing) equally so (to counteract the practice of spitting caused by smoking or chewing).

2. The REALIZATION that the use of tobacco is regarded by many authorities as a contributing cause of cancer.

3. A REALIZATION of the ill-effects of smoking to excess:

(a) Nervousness.
(b) Loss of appetite for ordinary food.
(c) Loss of efficiency (skill)[89]
    (a) Accuracy
    (b) Endurance
    (c) Ability to learn

4. A REALIZATION of the effect of the use of tobacco upon youth:[90]

(a) Interference with growth.
(b) Irritation of heart (characterised by shortness of breath, etc.).
(c) Disturbances of digestive tract.

5. A REALIZATION of other possible ill-effects of the use of tobacco:[91]

(a) Quickens heart beat. (Fluttering and pain in the region of the heart.)
(b) Disturb nervous system. (Headaches, trembling, nervousness.)
(c) Irritates mucous lining of throat—characterized frequently by chronic cough or hoarseness of voice.

6. The REALIZATION that tobacco contains a powerful poison called nicotine.

7. The REALIZATION of the significance of the fact that the first-class athletes of all sports almost universally abstain from the use of tobacco, at least during the training period and the period of active competition.

8. The REALIZATION that tobacco smoke is irritating to the eyes, and that it frequently is a hindrance in that the

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[89] Report of Joint Committee, p. 145.
[90] Healthful Living (Winslow), pages 413–415.
[91] Burkard, Chambers, Maroney, Book II, pages 357 and 358.

consciousness of the user has been drilled to the need of fresh air and ventilation in the room.[92]

9. The REALIZATION that the habit of using tobacco may be a source of inconvenience or discomfort in the future when one may not be able to indulge it for health or other reasons, and that it is probably better, therefore, not to start the habit at all (to counteract tendency to start the habit of smoking).

Completing Elements:

1. The REALIZATION that even the occasional use of tobacco tends to become habitual and immoderate, and is, therefore, undesirable.

2. The REALIZATION that many arguments may be advanced against the use of tobacco, but only a few for it.

3. A REALIZATION of the difference in effects of the use of tobacco upon

(a) An adult, or

(b) Youth or maid, boy or girl, still in process of rapid development and growth.

4. A REALIZATION of the harmful effects on character of practicing smoking in secrecy—cowardice, deception, etc.[93]

5. The REALIZATION that the use of tobacco is an unclean habit[93] (in many ways).

6. The REALIZATION that the use of tobacco is likely to have a detrimental influence on scholarship during the school period.[93]

7. The REALIZATION that the use of tobacco tends to dull the ability of the user to judge its ill-effects on himself.

Limiting Elements:

1. A REALIZATION of the distinction between the moral and the health aspects of the use of tobacco.

2. The REALIZATION that while certain experiments here shown "that some experiments[94] indicate that moderate and habitual use of tobacco is not harmful to adults and distinctly

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[92] Report of Joint Committee, p. 145.

[93] Washington, D. C., Course of Study Elementary Grades, p. 73.

[94] Quoted by Williams, p. 278: Gies, W. J. and others: Effect of Tobacco on Man, *New York Medical Journal*, June 1, 1921, p. 809.

helpful to certain ones," yet "certainly smoking to excess is injurious to health. For some, one cigar may be 'excess'; for others, the margin is greater. For any person 'four or five cigarettes during a period of forty minutes' is marked excess."[95]

3. The REALIZATION that the "use of tobacco" is to be interpreted as referring to its use in any form: snuff, chewing tobacco, or smoking pipe, cigarette or cigar.

4. The REALIZATION that there is no evidence of a scientific character that would warrant the assertion that smoking is more injurious to women than to men.[96]

Transferring Elements:

1. An ATTITUDE of postponing until maturity of mind and body (25 or 30 years of age) the question of beginning to smoke.

2. The REALIZATION of the particular desirability of a periodic medical examination for those indulging in the use of tobacco.

3. An ATTITUDE of introspection toward the possible ill-effects of tobacco on one's body (for users of tobacco).

4. The REALIZATION that good habits are good friends, and bad habits "poor" friends, and that one should select his habits as carefully as he selects his food, his clothes, his books, his recreation, etc.

D-13. Desirable outcomes relating to the use of tea, coffee and cocoa.

HEALTH EDUCATION COMPLEX D-XVIII
(Controlling System)

Controlling Outcome:

An ATTITUDE of desiring to abstain from the use of tea, coffee, or cocoa.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The REALIZATION that tea, coffee, or cocoa are not very nourishing.

[95] Williams, Personal Hygiene Applied, p. 277.
[96] Williams, Personal Hygiene Applied, p. 279.

2. The REALIZATION that milk is nourishing and is the ideal drink (and food) for adults as well as children; that it is a better drink for children than tea, coffee, or cocoa.

Counteracting Elements:

1. The REALIZATION that for some people coffee, tea, or cocoa may be harmful, causing:[97]

(a) toxic eye conditions
(b) disordered digestion
(c) nervous disturbances

(to counteract the possible ill-effects of drinking coffee, tea or cocoa).

2. The REALIZATION that even if tea, coffee or cocoa does not disturb digestion, it probably does not aid it to any appreciable extent.[98]

3. The REALIZATION that coffee with sugar but without cream probably delays digestion.[98]

4. The REALIZATION that cocoa markedly delays digestion and the development of normal acid conditions.[98]

Completing Elements:

1. The REALIZATION that taken alone (without food) tea and coffee have a negligible effect in overcoming muscle-fatigue, or increasing muscular power.[99]

Limiting Elements:

1. The REALIZATION that it cannot be truthfully stated that tea, coffee or cocoa will harm no one, and the Counter Balancing REALIZATION that it cannot be truthfully stated that they are harmful to everyone.

2. The REALIZATION that the question as to whether tea, coffee or cocoa is harmful or not depends upon individual variation, and that there is no scientific evidence at this time that will justify a sweeping or a final statement regarding the effects of these three drinks in common use.

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[97] See Williams: Personal Hygiene, p. 199.

[98] Hawk, P. B., and Association, *American Journal of Physiology*, vol. 52, No. 1, May 1920, pages 28–53. The Influencing tea, coffee and cocoa upon Digestion, (quoted by Williams).

[99] See Lusk: The Science of Nutrition, p. 325 (W. B. Saunders Co., Phila., 1919), (quoted by Williams).

3. The REALIZATION that all of the statements marked [98] regarding the effects of tea, coffee, or cocoa are based upon its use as a beverage *with meals*—as an aid or a deterrent to digestion.

Transferring Elements:

1. The REALIZATION that the drinking of tea, coffee or cocoa to excess is harmful for anyone.
2. The ATTITUDE that "truth may lie in the golden mean."
3. An ATTITUDE of Introspection toward the possible ill-effects of tea, coffee or cocoa on one's self (for users of those beverages).
4. The STANDARD (Ideal) of drinking water, milk, or fresh fruit juices instead of tea, coffee, or cocoa, at least during childhood and the period of growth and development.

D-14 (1 and 2). Desirable outcomes relating to the use of narcotics and other drugs.

HEALTH EDUCATION COMPLEX D-XIV-1
(Controlling System)

Controlling Outcome:

The ATTITUDE of refraining from the use of narcotics and other drugs.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. A REALIZATION of the individual and social benefits derived from abstinence from narcotics and other drugs.

Social Benefits:

(a) Decrease in crime
(b) decrease in immorality
(c) economic gain

Individual Benefits:

(a) character
(b) happiness
(c) health
(d) money

2. REALIZATIONS relating to Complex D-XIV-2. (Self-Medication, etc.).

Counteracting Elements:

1. A REALIZATION of the danger of experimenting with narcotics or other drugs (to counteract the possibility of becoming a drug addict as a result of curiosity).

2. REALIZATIONS relatng to the effects of habit-forming drugs:

(a) rapid growth and tenacious grip of habit
(b) physical effects
(c) mental effects
    (a) loss of character
    (b) low associates
    (c) crime

(to counteract any tendency to use, or to experiment with habit-forming drugs.)

Completing Elements:

1. An ATTITUDE of distrust toward any pill, powder, candy, or drink offered by a stranger or a chance acquaintance.

2. A REALIZATION of the identity of the chief narcotics—morphine, cocaine, acetanilid, aspirin.

3. OUTCOMES relating to Self-Medication Complex D-XIV-2.

Limiting Elements:

1. The REALIZATION that drugs may be taken on the prescription of a reputable and skilled physician.

2. The ATTITUDE, if in doubt as to the ability of one's physician, of consulting others.

Transferring Elements:

1. An ATTITUDE of avoiding all contact with narcotic or other drugs, save as advised or administered by a competent and reputable physician.

2. An ATTITUDE of desiring a physician who is modern and scientific in his training and in his point of view.

Health Education Complex D-XIV-2
(Controlling System)

Controlling Outcome:

An ATTITUDE of refraining from the use of patent-medicines, and commercialized "remedies" and "cures."

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. A REALIZATION of the possible ill-effects of self-medication:

(a) waste of money
(b) possible injury to health
(c) mental pangs of disillusionment and regret.

2. REALIZATIONS relating to Narcotics (Strengthening Elements, Complex D-XIV-1).

Counteracting Elements:

1. A REALIZATION of the harmfulness of the practice of giving soothing syrups to babies (to counteract that practice).

2. A REALIZATION of the delicacy of the human body mechanism, and that any diagnosis or prescription should be made by an expert (physician)—(to counteract self-diagnosis, self-medication, etc.).

Completing Elements:

1. OUTCOMES relating to the use of Narcotics and other drugs. (See Complex D-XIV-1.)

2. REALIZATIONS relating to patent medicines:

(a) their "proprietary" or commercial interest in sale.
(b) Limitations of the National Food & Drug Act.[100]
(c) revelations of the American Medical Association.[101]
(d) some contain harmful or habit-forming drugs.
(e) secret composition—a potential danger
(f) many contain alcohol
(g) psychological ill-effects of advertising on well people or on those who have only trivial ailment.
(h) psychology of such advertising—based on the fear instinct, and intended to scare people into taking nostrums, etc.

3.* REALIZATIONS relating to laxatives:

(a) difference between use and abuse
(b) value of physician's advice

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[100] Williams: Personal Hygiene Applied, p. 104.

[101] American Medical Association, Nostrums & Quackery, 535 N. Dearborn Street, Chicago, Ill.

(c) need of modifying living conditions rather than habitual use of laxatives.

4.* REALIZATIONS relating to headache cures:

(a) headache a symptom, not a disease in itself.

(b) headache remedies merely try to relieve the symptom rather than the underlying condition.

(c) most headache cures contain drugs that

(a) tend to be habit forming

(b) disturb the circulation

(c) depress the heart

(d) susceptible people may be injured by such drugs.

(e) value of physician's advice.

5.* REALIZATIONS relating to soothing syrups:

(a) relieve pain (which is only a symptom) and do not treat the underlying condition

(b) many contain some form of dangerous drug

(c) value of physician's diagnosis and prescription.

6.* REALIZATIONS relating to patent medicines for women's ailments:

(a) most preparations "contain extracts of little or no therapeutic value."

(b) "the chief action is that of the alcohol."

(c) Value of the skill and advice of a physician for this class of ailment.

7.* REALIZATIONS relating to patent-medicines for epilepsy:

(a) none of these mixtures will cure epilepsy

(b) some are dangerous, particularly when taken in ignorance of their composition.

8.* REALIZATIONS relating to kidney-disease and patent-medicines:

(a) Kidney-disease does not cause "pains in the back," except in its last stages.

(b) If one should really have Kidney-disease, the skilled services (diagnosis and treatment) of a physician should be obtained without delay.

(c) Some "remedies" contain drugs, which under certain conditions tend to initiate the already diseased kidney-tissue.

(d) No drug can cure kidney-disease, but a good physician can halt or retard its progress if consulted in time.

9.* REALIZATIONS relating to patent-medicines and cures for those who are over-weight:

(a) much depends on one's physical type over which one has no control.

(b) much harm can be done by unwise dieting.

(c) much can be done by rectifying certain living conditions which may exist:
  (a) over eating
  (b) lack of exercise

(d) some preparations contain thyroid extract, the unadvised use of which is dangerous.

(e) preparations which do not contain thyroid extract which are worthless.

(f) preparations to be rubbed into the body or to be in the bath as a cure for obesity are of no value for that purpose.

10.* REALIZATIONS relating to patented cures or remedies for deafness:

(a) "there is no drug nor device which will *cure* deafness and those so advertised should be viewed with suspicion."

(b) there are some worthwhile devices on the market which will aid to some extent those who are hard of hearing.

(c) there are many fake or fraudulent devices on the market of no value, some of which may be injurious.

(d) need of the services of an ear specialist for diagnosis, treatment, and advice.

11.* REALIZATIONS relating to cures for tuberculosis:

(a) No drug or preparation that will cure tuberculosis.

(b) The great danger in delaying the consultation of, and treatment by a reputable physician, the delay caused by self-drugging or self-treatment often results fatally.

12.* REALIZATIONS relating to cures for cancer:

(a) No drug or preparation will cure cancer.

(b) The great danger is in delaying the consultation of, and treatment by, a reputable physician; the delay caused by postponement or self-treatment may be the margin between life and death.

13.* REALIZATIONS relating to cures for Hernia (rupture):
(a) Many treatments and devices are of little or no value.
(b) Need of skilled treatment by a reputable physician.
(c) Serious results from delay or non-treatment.
(d) Avoidance of strains.

14. REALIZATIONS relating to the prescription and wearing of glasses (C-I-a).

15. REALIZATIONS relating to use of mineral waters:
(a) persons in good health do not need them
(b) persons not in good health should consult a physician
(c) much of the good from mineral springs—"drinking the waters"—comes from the other hygienic factors with which the springs are surrounded.
(d) many mineral waters are fraudulently advertised.

16. REALIZATIONS relating to the use of remedies for colds: (see Williams P. 275):
(a) many contain drugs that have a depressing effect on the heart, and therefore are distinctly dangerous for general or promiscuous use.
(b) many of this type are marked "absolutely safe."
(c) need of consulting a physician.
(d) dangers attending procrastination in the treatment of colds.

17. REALIZATIONS relating to the use of "tonics," blood-purifiers, conditioners, etc.
(a) drugs will not purify the blood, nor give tone to the body.
(b) the best "conditioners" are fresh air, sunshine, wholesome food, exercise, proper elimination, etc.
(c) "Avoiding pastries, sweets, greasy foods, much meat, etc., and substituting fresh fruits, green vegetables, coarse whole cereals, pure milk, eggs and a little meat."[102]

18. REALIZATIONS relating to the use of special (medicated) soaps:[103]
(a) no evidence exists of any medical virtue.
(b) chief attraction is in odor or appearance.

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*NOTE: Completing Elements 3 to 13, inclusive, based on Chapter of Report of Joint Committee on Self-Medication, etc., p. 149.

[102] Williams: Personal Hygiene Applied, p. 269.

[103] Personal Hygiene Applied, p. 288.

(c) "the hope that many people have in medicated soap is directly proportional to their belief in the mystical and the magical, and to their reading of promising advertisements"
(d) the desirable characteristics of a good soap are that it be (a) pure and (b) non-irritating.

19. REALIZATIONS relating to skin ointments, beautifiers, and cosmetics:
(a) skin conditions are of frequently the index of a general body condition that needs clearing up by a correction of living conditions.
(b) many beautifiers or remedies are therefore ineffectual.
(c) need of medical advice on body conditions
(d) the active ingredients of most of them can be purchased at a small fraction of the cost of the commercialized product.

20. REALIZATIONS relating to the use of hair tonics:
(a) of no special value
(b) condition of the hair depends on
    (a) general health
    (b) blood-supply to scalp.
(c) massaging and shampooing are the best local remedies
(d) in some cases, a special prescription made out by a specialist or a competent physician may be helpful.

21. REALIZATIONS relating to the use of hair removers, restoratives, beautifiers, etc.
(a) some hair-dyes are of harmful composition
(b) use depilatories only on advice of physician
(c) permanent wave procedures are somewhat detrimental to the health and beauty of the hair.
(d) electrolysis as a hair remover is dangerous, in the hands of anyone but an expert.

22. REALIZATIONS relating to "eat more" campaigns of certain types of food:
(a) a poorly balanced diet is inadvisable
(b) some claims are non-scientific in character[104]

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[104] Williams: Personal Hygiene Applied, pages 174 and 175.

(c) advisability of consulting with physician before eating "more" of anything.

23. The REALIZATION that the advertisements so solicitous of the public's health are placed there by corporations, associations, and others interested primarily in making a profit from the increased sale of their product.

Limiting Elements:

1. The REALIZATION that patent-medicine (commercial products) may be safely taken on the advice of a reputable and competent physician.

2. The REALIZATION that if one doubts the ability or skill of his physician, he should "check" on the opinion of the first by calling on a second, or if need be a third reputable physician for advice, or arrange for a conference of physicians or specialists.

Transferring Elements:

1. A REALIZATION of the value of periodic health examination for scientific diagnosis of defects or ailments.

2. A scientific ATTITUDE toward the treatment of ailments and defects, with the REALIZATION that diagnosis (and treatment) should not be based on speculation, but on accurate observation of each case:

(a) careful observation of phenomena
(b) exact interpretation and measurement of symptoms
(c) history of the case

3. The REALIZATION that while modern medicine is still "in the dark" concerning many phases of disease, yet it is scientific in that it is frank, and free from deception and fraud.

4. An ATTITUDE of distrust toward the advertising of remedies, cures and nostrums of all kinds, both as to

(a) symptoms described
(b) claims made for the remedy or cure.

D-15. Desirable outcomes relating to the sex function.

HEALTH EDUCATION COMPLEX D-XV
(Controlling System)

Controlling Outcome:

An ATTITUDE of self-control in matters pertaining to the sex function.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The REALIZATION that sex behavior if guided only by instinct is on the level of lower animal life.

2. The REALIZATION that "the whole of life sex, emotions, spirit, work, play and love are best achieved and best expressed when intelligence rules and guides, and when the purely instinctive elements are controlled."[105]

3. The REALIZATION that sex guided by intelligence is one of the beautiful manifestations in life, apart from and on a higher plane than the sex instinct of animals, uncontrolled by intelligence.

"It is only by frankly recognizing and developing the psychical and social aesthetic meanings of sex, that are distinctly human and superadded to the merely propagative function of the animal, that people can be led away from the almost universal secrecy, disrespect, vulgarity, and irreverence concerning every aspect of sex in human life. Sex instincts and processes are essentially pure and beautiful phases of that wonderful something we call 'Life'. Sex-education should aim to give this *esthetic attitude* by presenting life as fundamentally free from the degradation arising from the common misuse and misunderstanding of the sexual nature."[106]

Counteracting Elements:

1. The REALIZATION that sex desire should be subject to the control of one's intelligence and one's ideals (to counteract promiscuous sex relations).

2. OUTCOMES relating to the wholesome use of leisure time:

(a) HABITS of exercise, play, and outdoor recreation.

(b) IDEALS of service to others.

(c) ATTITUDE of interest in aesthetic pursuits—sculpture, painting, music, theatre, opera.

(d) HABITS of associating with people of intellectual type, (to counteract possible unwise recreation to sex instinct).

Completing Elements:

1. OUTCOMES relating to the care of the REPRODUCTIVE SYSTEM (see C-7).

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[105] Williams: Personal Hygiene Applied, p. 342.

[106] Statement of fundamental principles, Report on Social Hygiene Education, *Teachers College Bulletin*, Twelfth Series, No. 13, Teachers College, New York, 1913.

2. OUTCOMES relating to the care of the GLANDULAR SYSTEM (see C-10).

3. REALIZATIONS relating to the principles underlying successful marriage.

(a) Relatively high valuation on things other than sexual.
(b) Avoidance of marked incompatiability.
(c) Broader implications (sactifice, etc.) of the love relationship.
(d) Social demands for late marriage.
(e) Marriage not the final solution for the control of the sex impulse.
(f) Obligations and responsibilities of marriage.
(g) Obligations and responsibilities of parenthood.

4. An ATTITUDE of "normal, matter-of-fact understanding and true modesty"[107] toward the physical difference in the sexes.

5. A SINGLE STANDARD of morals for both sexes (in sex behavior) as necessary to comradeship and "a square deal" to members of the opposite sex.

6. An ATTITUDE of self-control and abstinence from sex function during (a) menstrual period, (b) pregnancy.

Limiting Elements:

1. The REALIZATION that there is nothing shameful about the sex function except the abuse of it—that it is a legitimate part of a healthy organism and should not be ignored or suppressed.

Transferring Elements:

1. "The same STANDARDS of honesty, fair play, courtesy, truthfulness, and helpfulness towards members of the opposite sex as toward members of their own sex."[108]

2. An ATTITUDE of distrust toward medical advertisements of books, nostrums, and devices or formulas relating to the sex function.

3. An ATTITUDE of desiring the advice or service of a reputable and competent physician on matters relating to the sex function.

4. IDEALS of joint responsibility for the honor of the family.

5. The IDEAL of "living most and serving best."[109]

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[107] Report of Joint Committee, p. 59.
[108] Report of Joint Committee, p. 59.
[109] Williams: Personal Hygiene Applied, p. 59.

OBJECTIVE E

The Control of Disease

This includes all desirable Controlling Outcomes relating to:

HEALTH EDUCATION COMPLEX:

1. The Prevention of Disease (Personal).....E-I
2. The Prevention of Disease (Social).....E-II
3. Proper Medical Attention.....E-III

E-1. Desirable Outcomes relating to the Prevention of Disease (Individual).

Health Education Complex E-I
(Controlling System)

Controlling Outcome:

An IDEAL of Health and Happiness as one's indivudal aim in life.

Elements of the Complex

Strengthening Elements:

1. The MOTIVE of desiring to avoid the mental and physical suffering, both of self and of others, that is caused by personal illness.

2. A REALIZATION of the sacrifices of others made necessary by the illness of one of the family group.

3. The MOTIVE of desiring to avoid causing such inconvenience and disturbance in the life of others.

4. The REALIZATION that recovery from disease is often made with accompanying and lasting bodily defects caused by the disease.

5. The MOTIVE of desiring to live as long and as serviceable a life as possible.

6. A REALIZATION of the cost of illness to the individual in dollars and cents—loss of wages, doctors and other medical bills.

7. A REALIZATION of the loss of time and energy to the individual caused by personal illness. (e. g. the case of a student taken with a serious illness, or again the decrease in personal efficiency caused by so slight an illness as a cold in the head).

8. A REALIZATION of the tremendous financial and economic loss to the nation, caused by illness of its citizens through lost wages, medical bills, premature death, etc.[110]

Counteracting Elements:

1. HABITS for the correction of non-specific disorders—e. g. headaches, constipation, incorrect posture, etc. (to counteract ailments indicated).

2. A REALIZATION of the dangers of self-diagnosis and self-medication (to counteract unwise use of patent medicines).

Completing Elements:

1. REALIZATIONS relating to the causes and prevention of the various forms of bodily disturbance:

(a) communicable disease:[111]

(typhoid fever, typhus fever, relapsing fever, small-pox, chicken pox, scarlet-fever, measles, mumps, whooping-cough, influenza, cerebro-spinal meningitis, pneumonia, rheumatic fever, malaria, anthrax, hydrophobia, lockjaw, trichinosis, hookworm, intestimal tapeworms).

(b) nutritional disease:[112]

(rickets, scurvy, pellagra, diabetes, gout, goitre, cretinism and myxedema, obesity).

(c) acute poisoning:[113]

(poisons developed in food and poisons derived from working in certain metal trades).

(d) chronic degenerative disease:[114]

(e) functional disease:[115]

(neurasthenia, hysteria.)

(f) local infections:[116]

(g) cancer and tumors[117]

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[110] Estimated by Louis I. Dublin, statistician of the Metropolitan Life Insurance Company, before the Institute of Politics, at Williamstown, Mass. (1926), at $2,000,000,000.

[111] For details of causes and prevention see Williams, Personal Hygiene Applied, pages, 356–368.

[112] For details, etc. See *Ibid*, pages 368–370.

[113] For details, etc. See *Ibid*, pages 370 and 371.

[114] For details, etc. See *Ibid*, p. 371.

[115] For details, etc. See *Ibid*, pages 371 and 372.

[116] For details, etc. See *Ibid*, page 372.

[117] For details, etc. See *Ibid*, pages 372–374.

2. REALIZATIONS relating to the relative seriousness of the various bodily disorders.[118]

3. REALIZATIONS relating to the means by which communicable diseases may be transmitted through

(a) contact of sick with the well.
(b) objects in common use (sick and well).
(c) insects or vermin.
(d) infection of food or drink.

4. Desirable OUTCOMES relating to the Control of Personal and Environmental Cleanliness (see Objectives A and B).

5. Desirable OUTCOMES relating to the Control of the Normal Functioning of Certain Parts of the Body (see Objective C-1 to 10—Organs of Special Sense, Circulatory System, Digestive System, etc.).

6. Desirable OUTCOMES relating to the Control of Normal Growth and Energy (see Objective D-1 to 15).

7. The REALIZATION that "correct habits of living in some instances will help to prevent these non-communicable diseases or to prolong life, if they exist: diabetes, diseases of arteries, gout, certain heart diseases (insofar as they are sequels of communicabel diseases), Bright's disease and chronic nephritis, apoplexy."[119]

Limiting Elements:

1. The REALIZATION that while a high general vitality is valuable in resisting certain diseases—cold, tuberculosis, and minor infections—there is little evidence that soundness of body will protect one from the common infectious diseases (typhoid, diphtheria, malaria, influenza, etc.) and that infection depends on:[120]

(a) the size of the dose of the infecting organism
(b) the virulence of the organism
(c) the presence of "anti-bodies" or immunizing substances within the individual.

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[118] For details, etc. See *Ibid*, pages 374–376.

[119] Report of Joint Committee, p. 34. It should be noted that in the case of diabetes, the determining factors in its origin and development are not known, but it is recognized that correct habits of living are a necessary part of treatment.

[120] Report of Joint Committee, p. 31.

2. The REALIZATION that while Christian Science, osteopathy, chiropractic and other schools and cults should not be regarded as reliable methods of treatment for all ills, yet there may be in them distinct values for certain types of physical or mental disorder.

3. The REALIZATION that while "a general understanding of the scientific and well-proved means of preventing diseases, communicable or otherwise, is invaluable," yet this should not be carried to the point of arousing a morbid interest in the pathology of disease.

Transferring Elements:

1. An ATTITUDE of desiring to utilize the expert medical advice and service of: competent physicians, clinics, hospitals and other health agencies.

2. Certain STANDARDS for the selection of a physician based on a concept of scientific medicine.

(a) standards of training (entrance requirements of training schools).

(b) scholastic standards maintained by the particular school or cult.

(c) standards of scientific achievement by the particular school or cult.

(d) ethical standards of the particular school or cult.

3. REALIZATIONS relating to the characteristics of scientific medicine—frankness, freedom from taint of hypocrisy, careful observation of phenomenal symptoms, exact interpretation and measurement of signs, complete history of the course of the disease, and openness toward new developments in the field of medicine.

4. REALIZATIONS relating to the limitations of the Federal Food and Drugs Act.[121]

5. An ATTITUDE of distrust toward patent medicines, particularly toward those that appeal to fear in their advertising.

6. A REALIZATION "that the position of the Christian

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[121] See Williams: Personal Hygiene Applied, p. 104, also pages 158, 175, 196, 246, 259, 289, 296, 305, 306, 391.

Scientist is not supported by science, as the world knows science." (Williams, Personal Hygiene Applied, P. 85.)

7. An ATTITUDE of discrimination between the probable values and the probable shortcomings of osteopathy, chiropractice and other schools or cults of medical thought or practice.

8. An ATTITUDE of Introspection toward the general state of one's Health and Happiness, with intelligent self-criticism.

E-2. Desirable outcomes relating to prevention of disease (social aspects).

HEALTH EDUCATION COMPLEX E-II
(Controlling System)

Controlling Outcome:

An IDEAL of Social Responsibility for the Happiness and Health of others.[122]

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. A REALIZATION of the misery and mental anguish caused by death and disease.

2. A REALIZATION of the physical pain and injury caused by disease.

3. The ATTITUDE of desiring to assist in the forwarding of a more efficient existence of the social whole, through the elimination of the financial and economic loss caused by disease (see E-I, Strengthening 8.).

4. The REALIZATION that there is no essential conflict between what is good for the individual and what is good for the race.

Counteracting Elements:

1. The IDEAL of Health and Happiness as a world ideal in place of "wealth" as a world ideal.[123] (See also Objective H—to counteract the sacrifice of Health for the gaining of Wealth).

2. A REALIZATION of the need for Health Education, both of children and adults, as an aid in the counteracting of any low standards existing in certain social aspects of health.

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[122] See Williams: Personal Hygiene Applied, p. 54–58.
[123] See Galsworthy, John: *Atlantic Monthly*, Feb. 1920, p. 173.

(a) public sanitation and the control of disease.
(b) health work in the schools.
(c) housing laws and regulations.
(d) protection of workers.
(e) infant mortality rates.

Completing Elements:

1. STANDARDS relating to the public supply of pure air:
(a) ventilation of buildings.
(b) suppression of smoke and gas nuisance.
(c) tenement house laws and inspection.
(d) cleanliness of out-buildings, barns, school toilets, etc.

2. STANDARDS relating to the public supply of pure water:
(a) adequate water supply (or system).
(b) stream and river protection.
(c) filtration of drinking water.
(d) sewage disposal.

3. STANDARDS relating to the public supply of pure food:
(a) school luncheons.
(b) pure food and drug laws.
(c) inspection of stores and markets.
(d) inspection and regulation of public eating places.
(e) inspection of slaughter-houses.
(f) inspection of cattle, dairies, and milk as served or delivered.
(g) inspection of cold-storage warehouses.

4. STANDARDS relating to opportunities of the public for exercise:
(a) public gymnasiums—in schools and elsewhere.
(b) playgrounds and athletic fields.
(c) recreation centers.
(d) bathing beaches and swimming pools.
(e) public parks.

5. STANDARDS relating to facilities for cleanliness—both personal and environmental:
(a) need for efficient and orderly collection of ashes and rubbish.
(b) need for efficient and regular collection and disposal of garbage.
(c) need for regular and sanitary cleaning of streets, alleys, and area-ways.

(d) need for generous provision for public bathing in congested districts.
(e) need for participation in clean-up week activities.

6. STANDARDS relating to public co-operation for preventing the spread of contagious diseases:
(a) medical inspection of pupils in all schools.
(b) school nurse service—home and school.
(c) vaccine and serum treatments for artificial immunization.
(d) "Swat the fly" campaigns and other movements for the extermination of insects and vermin.

7. STANDARDS relating to the restriction and regulation of the manufacture and sale of:
(a) alcoholic drinks
(b) tobacco
(c) cocaine and other drugs
(d) patent-medicines

8. STANDARDS relating to the conditions and hours of work:
(a) Child Labor—legislation and inspection.
(b) Factory—legislation and inspection.
(h o u r s, sanitation, safety devices, seats for women workers, etc.).
(c) Schools—(seating, lighting, ventilation, play space, lunchrooms, toilets, etc.).

9. A REALIZATION of the nature and value of private organizations working for the improvement of working conditions—e. g., child labor and education associations of various types.

10. REALIZATIONS relating to the value to the community of:
(a) Ambulance service.
(b) Hospitals and clinics.
(c) Dispensaries, and health centers.
(d) Vital statistics.
(e) Baby-saving campaigns.
(f) Board of Health inspection and service.
(g) Municipal bulletins on health.
(h) Health drives of various types.

11. REALIZATIONS relating to the laws of heredity, artificial selection, and eugenics.

12. REALIZATIONS (for parents, guardians, teachers, and others responsible for the welfare of the young) relating to child physiology, child psychology, and "the healthful environment and regimen of life that should be the child's."*[124]

Limiting Elements:

1. The REALIZATION that this Ideal of Social Responsibility should not lead one into habits of interference with the rights of others—that the control exercised by organized society should be exercised only to protect the group, or parts of it, as approved by the majority.

2. The REALIZATION that an effective application of the Ideal of Social Responsibility is not merely "military" and administrative, but rather "educational" and administrative.*[125]

Transferring Elements:

1. An IDEAL of the responsibility of the individual for the welfare of the group.

2. An ATTITUDE of Intelligent Criticism toward the health problems of one's environment (community).

E-3. Desirable outcomes relating to proper medical attention.

HEALTH EDUCATION COMPLEX E-III
(Controlling System)

Controlling Outcome:

A REALIZATION of the nature and value of proper medical attention.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. A REALIZATION that delay in securing proper treatment often results seriously or fatally.

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[124] Report of Joint Committee, "G. Education for Parenthood and Social Hygiene," p. 60.

[125] See Williams: Personal Hygiene Applied, p. 39, et seq "Education in the purpose and value of the laws passed should accompany their application. Legal attack on all social problems without educational meauress often results in disrespect for all law," etc.

2. The REALIZATION that "instinct" cannot be trusted as a safe guide because of the enlarged and higher artificial environment of man.[126]

3. The REALIZATION that the use of intelligence in the curing of one's ills is one of nature's methods, and a better one for human beings than mere reliance on instinct.[127]

4. IDEALS of Health and Happiness as aims in the life of the individual.

Counteracting Elements:

1. A REALIZATION of the dangers of self-diagnoses and self-medication:

(a) dangers resulting from incorrect and expert diagnosis.

(b) dangers resulting from unwise use of medicine—what is good for one individual may be harmful to another.

(c) dangers resulting from the delay in securing proper treatment, caused by attempts of the individual to treat himself, often result seriously or even fatally.

(to counteract the tendency of the individual to trust to self-diagnosis and self-medication when more scientific and reliable treatment is available).

2. The REALIZATION that the claims made for many patent-medicines as "remedies" or "cures" are unreliable, specious and untrustworthy (to counteract reliance on patent-medicines).

Completing Elements:

1. A REALIZATION of the variety and value of "specialists" for consultation, diagnosis, and treatment;—e. g. "eye", "ear, nose, and throat", "skin", "stomach", surgeons who specialize in certain types of operation, "children's" specialists, etc.

2. REALIZATIONS pertaining to the nature and value of certain other types of medical service:

(a) ambulance service

(b) hospital service

(c) clinic, dispensary, and health center service.

(d) nursing service.

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[126] See Williams: Personal Hygiene Applied, pages 48 and 49.

[127] See Williams: Personal Hygiene Applied, pages 50 and 51.

3. A REALIZATION of the value of periodic medical examinations for the early detection of disease.[128]

4. A REALIZATION of the need of having one's physical defects corrected.

5. Desirable OUTCOMES relating to the home care of the sick:[129]

(a) REALIZATIONS relating the correct procedure for bathing a patient in bed.

(b) REALIZATIONS relating to making a bed with a helpless patient in it.

(c) REALIZATIONS relating to bathing a baby.

(d) REALIZATIONS relating to elevating the sick bed.

(e) REALIZATIONS relating to the temperature and the pulse.

(f) REALIZATIONS relating to the procuring of various types of nurses for the sick.

(g) REALIZATIONS relating to the care of the sick room, light, ventilation, temperature, refuse, decorations, etc.

6. The REALIZATION that early recognition is perhaps the greatest single factor in the cure of disease.

Limiting Elements:

1. The REALIZATION that self-medication or self-diagnosis may under certain conditions be justifiable and necessary—e. g. frontier life, or other forms of life out of contact with the facilities and services provided by civilization.

2. The REALIZATION that one should not be morbidly introspective regarding the development of possible symptoms of disease.

Transferring Elements:

1. REALIZATIONS relating to the common symptoms of disease.

(a) headache, or fever.

(b) "sore throat," or cough

(c) skin rashes.

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[128] Authorities unite in emphasizing the importance of detecting diseases in their early or incipient stages.

[129] American National Red Cross, Home Hygiene and Care of the Sick.

2. An ATTITUDE of introspection toward the condition of one's health.

3. REALIZATIONS relating to the characteristics of scientific medicine (see 3. under Transferring Elements of Complex E-I).

4. REALIZATIONS pertaining to desirable standards to be used for the selection of a physician (see 2, under Transferring Elements, Complex E-I).

5. The REALIZATION that minor illnesses, unchecked, frequently result in more serious ailments.

6. The REALIZATION that, in general, early recognition is perhaps the greatest factor in the cure of disease.

OBJECTIVE F

The Control of Accidents[130]

This includes all Controlling Outcomes relating to the prevention of accidents:

HEALTH EDUCATION COMPLEX

1. At Home (includes safety-first for babies) F-I
2. At School ..... F-II
3. In The City ..... F-III
4. In The Country ..... F-IV
5. At The Seashore ..... F-V
6. At Play ..... F-VI
7. To The Baby (see "At Home," above)
8. At Work ..... F-VII
9. When Traveling ..... F-VIII

Added:

10. By Fire ..... F-IX

F-1. Desirable outcomes relating to the prevention of accidents in the home.

Health Education Complex F-I
(Controlling System)

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[130] Accident: 1. "Something that happens undesignedly; a fortuitous event; contingency. 2. A casualty; mishap. 3. Any non-essential circumstance or attribute." Standard Dictionary, Desk, Funk & Wagnalls, 1925.

Controlling Outcome:

An ATTITUDE of "Safety-First" in the home.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

(Common Factors Of All Safety Complexes):

1. Common Factor: The ATTITUDE of desiring to avoid needless pain, injury, disability, or disfigurement.

2. Common Factor: The REALIZATION that it is a matter of shame to be injured, if the injury were avoidable through the taking of proper precautions.

3. Common Factor: REALIZATIONS of the value of human life in general:

(a) to self-opportunity for happiness and service.

(b) to others—ties of loved ones
—dependents
—economic loss to individuals, organizations, country, etc.

4. Common Factor: A REALIZATION that the growing complexity of modern life makes an attitude of "safety-first" on the part of the individual absolutely imperative.

5. Common Factors: REALIZATIONS relating to the tremendous prevalence and occurrence of accidents in modern life, e. g.

(a) The REALIZATION that the accident casualties in the United States during the period of the World War were much greater than the total War casualties of our troops at the front:[131]

Wounded in France.....	(about)	225,000
Seriously injured by accident in the U. S.	"	3,000,000

(b) The REALIZATION that in many parts of the country, more children are being killed by traffic accidents than by malaria, typhoid, and small-pox combined.[132]

6. Common Factor: REALIZATIONS relating to the economic cost of accidents, e. g.,

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[131] See Education in Accident Prevention by E. George Payne, pages 17 and 153.

[132] *Ibid*, p. 153.

(a) The REALIZATION that this cost is estimated by some at over a billion dollars annually.[133]
(b) The REALIZATION that this cost is passed on to the public through increased prices.
(c) The REALIZATION that cripples and dependents (traceable to accidents) must often be supported by the public —either through governmental or private agencies.

7. Common Factor: The REALIZATION that accidents to children are often particularly sad because:
(a) of decreased opportunity for enjoying life
(b) the necessity of them starting life handicapped by disfigurement or physical disability—a handicap that is both social and economic.
(c) physical ill-effects throughout life—debility, nervousness, etc.

8. Common Factor: The REALIZATION that approximately 2,000,000 are injured and 80,000 are killed annually in accidents that are for the most part preventable.

Counteracting Elements:

Common Factor:

1. An ATTITUDE of refusing to endanger one's life or the life of others needlessly (to counteract habits of carelessness or acts of foolish bravado).

2. The HABIT of placing burnt match-stems in safe receptacles (to counteract the tendency to throw them in waste-paper baskets, etc.).

3. A REALIZATION of the danger in the upsetting of an oil lamp or oil-stove and the consequent need of care in moving about in their vicinity (to counteract the possibility of fire from such sources).

4. A REALIZATION of the superiority of electricity (in the form of either lamps or torches) over candles, oil lamps, or gas from the standpoint of fire-prevent (to counteract the possibility of fire originating in any of the forms previously mentioned).

5. The HABIT of avoiding dangerous nails or projections, under foot (to counteract injuries to the foot or injuries caused by stumbling).

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[133] *Ibid*, p. 153.

6. The HABIT of avoiding play around open windows, or of leaning out of windows (to counteract falls due to being pushed out, or loss of balance).

7. The HABIT of eating only clean food and drink, particularly with reference to the cleanliness of bottles, pans, and other containers used by children in "playing-house" (to counteract the occurrence of illness from that source).

8. The HABIT of never eating or drinking anything unless one is reasonably sure that it is harmless—this particularly applies to liquid medicines, alcoholic drinks, other beverages, pills, mushrooms, berries, etc. (to counteract the possibility of poisoning or illness from any of the sources indicated).

9. The HABIT of avoiding play with fire-arms, even though "unloaded" (to counteract the possibility of accidental shootings).

10. The REALIZATION that one should never aim a fire-arm or other weapon at another, nor permit one to be aimed at one's self (to help counteract the possible injuries from such sources).

11. REALIZATIONS relating to Safety-First in relation to the construction of houses, dwellings and other buildings, e. g.,
(a) approval of underwriters of wiring, etc.
(b) lightning rods on barns
(c) approval of building inspectors, regarding safety and other regulations for the protection of life and health.

12. HABITS of orderliness—"a place for everything and everything in its place"—(to counteract the possibility of accident due to stumbling or tripping over objects, etc.).

13. An ATTITUDE of fear toward playing with matches or fires (to counteract the "attractiveness" of playing with the fire, and about fires).

14. An ATTITUDE of caution toward the handling of gasolene, benzine, or kerosene, in the presence of fire or flame of any kind, and REALIZATIONS relating to proper procedure in the handling of these and other explosives (to counteract the possibilities of explosions and fires from the sources indicated).

15. Desirable OUTCOMES relating to Safety-First for the Baby:[134]

(a) The HABIT of keeping the baby away from contact with fire:
  (a) stoves—coal and oil
  (b) oil lamp
  (c) matches.

(b) The HABIT of providing the baby with safe objects for play:
  (a) large (to avoid danger of choking)
  (b) not sharp or pointed
  (c) clean and sanitary, being careful to avoid contact with powders (medicinal or chemical, e. g., paris green, arsenate of lead, etc.), liquids, pills or other medicines.

(c) The HABIT of providing a safe place for the baby's play:
  (a) not on bed—unless guarded by a rail.
  (b) not near unguarded or open doorways, steps, or stairs.
  (c) not in unprotected swings, chairs, etc.
  (d) Not in chairs or swings that may upset.
  (e) If on the floor, then
    1. On a blanket, sheet, or quilt.
    2. Out of the path of drafts.
    3. Preferable in a play-pen.
  (f) If in a baby coach or carriage, then parked in a safe place:
    1. No glare in baby's eyes.
    2. Away from traffic or grades.
    3. Brakes on.
    4. Away from molestation by strangers.
    5. In a quiet place, if possible.
    6. Protected from dust, flies, or mosquitoes.
    7. Under easy and constant observation.

(All of the above outcomes—15. (a) to (c), inclusive—are desirable for counteracting the possibility of mishaps, accidents to, or illness of, the baby).

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[134] Burkard, Chambers, Maroney, Book I, pages 363 and 367.

Completing Elements:

1. Common Factor: The HABIT of using safety appliances wherever and whenever possible (e. g., household size fire-extinguishers).

Limiting Elements:

1. Common Factor: The REALIZATION that it is justifiable to risk life or injury to self, or even to others, provided some justifiable social end may be served thereby.

Transferring Elements:

1. Common Factor: An ATTITUDE of desiring to save one's self "for more and better adventures."[135]

2. Common Factor: An ATTITUDE of desiring to avoid association with those who disregard the principles of Safety-First.

F-2. Desirable outcomes relating to the prevention of accidents at school.

HEALTH EDUCATION COMPLEX F-II
(Controlling System)

Controlling Outcome:

An ATTITUDE of "Safety-First" at school.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

(See Common Factors under Strengthening Elements of Complex F-I,—elements numbers one to seven, inclusive.)

Counteracting Elements:

1. See Common Factor, Element one, under Counter-Acting Elements of Complex F-I.

2. REALIZATIONS relating to the carrying of foreign

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[135] 1. See National Safety Council's Pamphlet, "Safety for More and Better Adventures," by Albert W. Whitney, quoting page 2: "All that is worth while in life—love, friendship, loyalty, knowledge, art, religion—are adventures in which the human spirit goes out to experience the realities of life."

2. Also, "High School and Hazards," by Thos. W. Gosling, in *The Educational Review*, November 1926, pages 200 to 202, particularly the closing sentence: "Adventure, hazard, danger cannot be, and ought not, to be taken out of human experience but they may be and should be sublimated to great ends."

objects in the mouth (pencils, pens, lolly-pops or "taffies," needles, etc.) when standing, walking, or running, particularly in crowded places (to counteract the possibility of accidents originating in the sources indicated).

3. REALIZATIONS relating to the danger of throwing:
(a) snow-balls
(b) books
(c) crusts of bread,[136] or cake
(d) baseballs, or hard, solid rubber balls
(e) board-erasers, chalk, etc.

(to counteract the possibility of injury from any of the above sources).

4. An ATTITUDE of refusing to indulge in rough play, batting or running games, in the crowded schoolyard or playground, particularly in the presence of younger children (to counteract the possibility of injury from any of the sources indicated).

5. An ATTITUDE of refusing to run within the school building, particularly
(a) around corners
(b) down steps
(c) in the halls

(to counteract the possibility of injury from any of the sources indicated).

6. An ATTITUDE of refraining from "sky-larking" about the fire-escapes, or open windows (to counteract the possibility of accidents due to sources indicated).

7. An ATTITUDE of refraining from pointing pens, pencils, or other sharp objects at the eyes of another, even "in fun" (to counteract the possibility of injury to the eye from such dangerous play).

Completing Elements:

1. The HABIT of obedience to the Safety Patrol, student "Traffic" Squad, or other student officers and representatives.

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[136] It is related that the American historian, Prescott, lost the sight of an eye, when a student from a thrown crust of bread.

2. The HABIT of using the proper receptacles and containers for fruit skins of various kinds, apple cores, etc.

3. A REALIZATION of the value of school fire-drills and consequent ATTITUDE of loyal and efficient co-operation toward it.

4. Desirable HABITS relating to school fire-drills:

(a) absolute silence
(b) eyes to front
(c) hands at side
(d) military obedience to teacher or other leader.

5. See also Common Factor, under Completing Elements, Complex—F-I.

Limiting Elements:

1. See Common Factor, under Limiting Elements, Complex F-I.

Transferring Elements:

See Common Factors 1 and 2, under Transferring Elements, Complex F-I.

F-3. Desirable OUTCOMES relating to the prevention of accidents in the city.

HEALTH EDUCATION COMPLEX F-III
(Controlling System)

Controlling Outcome:

An ATTITUDE of "Safety-First" in the activities of city life.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

See Common Factors under Strengthening Elements, Complex F-I.

Counteracting Elements:

1. HABITS relating to the proper method of alighting from trolley-cars, trains, and automobiles (to counteract the possibility of accident arising from the sources indicated:

(a) The HABIT of waiting until the vehicle has stopped moving.
(b) The HABIT of stepping to the ground with the correct foot first (if alighting from the right side, the right foot first; the left side, the left foot first).
(c) The HABIT of using the hand-rail.

2. The HABIT of waiting until a vehicle has stopped moving before attempting to board it (to counteract the possibility of accident while boarding a moving vehicle).

3. HABITS relating to care in crossing the street:

(a) The HABIT of looking in the direction from which traffic is approaching—(in the case of "two-way" streets, one should look to the left for the first half of the crossing, and after the middle of the street has been reached, one should look to the right).

(b) The HABIT of "crossing at crossings."

(c) The HABIT of looking for, and complying with, all traffic signals—lights, semaphores, whistles and hand signals of traffic officers.

(d) The HABIT of looking before starting to cross the street (to counteract the possibility of accident when crossing the street).

4. The HABIT of observing and using white marks; this applies equally to pedestrians and drivers (to counteract the possibility of traffic accidents).

5. A REALIZATION of the danger of trying to "run across" before a rapidly moving vehicle (to counteract the possibility of injury from that source).

6. A REALIZATION of the danger attendant upon stepping into the street from behind a parked or moving vehicle (to counteract the tendency to be careless in this respect).

7. A REALIZATION of the danger of permitting head or arm to protrude from a moving train or trolley (to counteract unwise exposure to such an injury).

8. The ATTITUDE of desiring to avoid large crowds and disorderly congregations of people (to avoid possible cause of accident or illness).

9. An ATTITUDE of self-control and of "keeping" cool in an emergency in any public place (to avoid injury through panicky action).

10. The HABIT of locating the nearest "fire-exit" to one's

seat when attending public performances in theatres, halls, auditoriums, etc. (to counteract possible injury in case of fire).

Completing Elements:

1. See Common Factor under Completing Elements, Complex F-I.

Limiting Elements:

See Common Factors, under Limiting Elements, Complex F-I.

Transferring Elements:

See Common Factors, under Transferring Elements, Complex F-I.

F-4. Desirable outcomes relating to the prevention of accidents in rural life.

HEALTH EDUCATION COMPLEX F-IV
(Controlling System)

Controlling Outcome:

An ATTITUDE of "Safety-First" in the activities of rural life.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

See Common Factors, under Strengthening Elements, Complex F-I.

Counterctaing Elements:

1. The HABIT of "walking against traffic"—keeping on the left side of the road—when walking in the road (to counteract the possibility of being hit by an unseen vehicle).

2. The REALIZATION that 1, above, is particularly important when walking in the road at night (to counteract the possibility of being hit by an unseen vehicle).

3. The HABIT of stepping off to one side of the road at the approach of a vehicle (a safety measure designed to counteract the possibility of being hit by an unseen vehicle).

4. Desirable OUTCOMES relating to railroads and railroad crossings (to counteract the possibility of accidents from this source):

(a) An ATTITUDE of caution when in the vicinity of a railroad, whether one be walking or driving.
(b) The HABIT of observing the directions of signs or warning signals at railroad crossings.
(c) The REALIZATION that the railroad bed is private property and as such should be respected.
(d) An ATTITUDE of desiring to keep away from railroad property—yards, tracks, cars, etc.
(e) The REALIZATION that, if necessity justifies the need for "walking the tracks," one should walk on the left-hand track.
(f) A REALIZATION of the nature and danger of "frogs" and switches.

5. Desirable OUTCOMES relating to dangers in the barn (to counteract the possibility of accidents arising from that source):

(a) HABITS of caution in the handling of animals, particularly when one is near the rear quarters of horses or mules.
(b) A REALIZATION of the dangers of "sky-larking" on lofty rafters and ladders.
(c) An ATTITUDE of caution toward the prongs of hay-forks and pitch-forks, whether in use or not.
(d) The HABIT of placing hay-forks and pitch-forks in a safe place when they are not in use.

6. Desirable OUTCOMES to counteract certain dangers relating to, or attendant upon, swimming and bathing:

(a) The REALIZATION that one should not go in swimming when overheated from exercise or other strenuous exertion.
(b) The REALIZATION that one should not go in swimming immediately after a heavy meal.
(c) An ATTITUDE of caution in not venturing too far from shore.
    (a) swimmers
    (b) non-swimmers.
(d) A REALIZATION of the dangers of diving into unknown or unfamiliar waters; due to the possible presence of rocks, stumps of trees, submerged logs or unexpected shallowness of water.

7. HABITS of caution to counteract the possibility of danger in climbing trees.

(a) The HABIT of testing "supports" and "holds" before putting full weight upon them.

(b) The REALIZATION that one should not venture to too great a height.

8. Desirable OUTCOMES relating to proper sanitation, modes of living, etc., see (particularly):

(a) Objective B—Environmental Cleanliness.

(b) Complex D-III.

(c) Complex D-IV.

9. Desirable OUTCOMES relating to HABITS of "Safety-First" when

(a) rowing

(b) canoeing

(c) sailing

(d) motor-boating

(to counteract the possibility of accidental drowning, explosions, etc.).

Completing Elements:

1. See Common Factor, under Completing Elements, Complex F-I.

Limiting Elements:

See Common Factor, under Limiting Elements, Complex F-I.

Transferring Elements:

See Common Factors 1 and 2, under Transferring Elements, Complex F-I.

F-5. Desirable outcomes relating to the prevention of accidents at the seashore.

HEALTH EDUCATION COMPLEX F-V
(Controlling System)

Controlling Outcome:

An ATTITUDE of "Safety-First" in activities of life at the seashore.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. See Common Factors, under Strengthening Elements, Complex F-I.

Counteracting Elements:

1. OUTCOMES desirable because of their value in counteracting the possibility of danger when bathing:

(a) An ATTITUDE of caution in the presence of a strong tide, a high sea, or other rough water.
  (a) swimmers
  (b) non-swimmers.

(b) The HABIT of staying in the proximity of others, rather than of venturing alone.
  (a) swimmers
  (b) non-swimmers.

(to counteract the possibility of accidental drowning.)

2. Desirable OUTCOMES relating to the "glare" of strong sunlight and its effect on the eyes—See Complex C-I-a-1.

(to counteract the possibility of injury to the eyes from the source indicated).

3. Desirable OUTCOMES relating to the protection of the ear (sand, foreign substance, etc.)—See Complex C-I-b.

(to counteract the possibility of injury to the ear).

4. OUTCOMES desirable for the protection of the skin to counteract the occurrence of extreme cases of sunburn:

(a) The HABIT of exposing the skin to the effects of a strong sun gradually.
  (a) gradually increase of area exposed.
  (b) gradually increase of length of time of exposure.

(b) The HABIT of protecting arms and legs, when desirable, with
  (a) clothing, robes, etc., or
  (b) cold cream, powder, or lotion, if well recommended.

(c) The REALIZATION that some skins are more sensitive than others and can stand more intense sunlight, and for greater lengths of time, than others (to counteract unusual susceptibility to sunburn).

5. OUTCOMES desirable for protection when fishing (both for self and others), particularly care in the handling of barbed hooks and the "casting" of lines (to counteract the possibility of accidents when fishing).

6. Desirable OUTCOMES relating to Habits of "Safety-First" when:

(a) rowing
(b) canoeing
(c) sailing
(d) motor-boating

(to counteract possibility of accidental drowning or of explosions).

Completing Elements:

1. See Common Factor, under Completing Elements, Complex F-I.

Limiting Elements:

1. See Common Factor, under Limiting Elements, Complex F-I.

Transferring Elements[8]

1. See Common Factors 1. and 2., under Transferring Elements, Complex F-I.

F-6. Desirable outcomes relating to the prevention of accidents to children while at play.

HEALTH EDUCATION COMPLEX F-VI
(Controlling System)

Controlling Outcome:

An ATTITUDE of "Safety-First" in Play.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. See Common Factors, Strengthening Elements, Complex F-I.

Counteracting Elements:

1. A REALIZATION of the danger of "stealing" rides on vehicles, cars, trains, etc. (to counteract the tendency of boys to "hook" or "hitch" rides).

2. A REALIZATION of the danger of playing about moving or standing cars or trains (to counteract the possibility of injury from that source).

3. A REALIZATION of the danger of bicycling or roller skating on busy streets or roads crowded with traffic (to counteract the possibility of accidents arising from this source).

4. Desirable OUTCOMES relating to safety in ice-skating (to counteract the possibility of accidents arising from this source):

(a) The HABIT of observing and obeying danger signals and warnings.

(b) An ATTITUDE of caution about venturing on ice of uncertain thickness and safety.

(c) The HABIT of "staying with the crowd," rather than the practice of venturing alone.

(d) The HABIT, in general, of skating close to shore.

5. The HABIT of staying away from deep water—edges of boats, piers, docks, etc.—if one cannot swim (to counteract the possibility of falling off, loss of balance, etc.).

6. A REALIZATION of the dangers of sky-larking in a canoe or row-boat (to counteract possibility of accidental drowning).

7. An ATTITUDE of being unwilling to play around or in unfinished buildings, or on high scaffoldings (to counteract the possibility of accidents arising from the causes indicated).

8. Desirable OUTCOMES relating to Fourth of July celebrations (to counteract the usual "Fourth of July" toll of accidents and deaths):

(a) A REALIZATION of the danger of throwing fire-crackers, or fireworks, at others, or of pointing them toward others.

(b) A REALIZATION of the danger of the practice of bending over fire-crackers to see if they are "duds," without first taking due precautions.

(c) An ATTITUDE of refusing to hold fire-crackers, large or small, in one's hand.

(d) An ATTITUDE of refusing to play with, or be near, toy cannons that load with powder.

(e) A REALIZATION of the danger of handling, or of being near, when in the hands of others, guns and revolvers.

(f) The HABIT of refusing to permit anyone to aim a fire-arm of any kind at one's self, and an ATTITUDE of refusing to so aim one's self.

(g) A REALIZATION that patriotism may be expressed in higher types of celebration than that of promiscuous use of fire-works and fire-crackers by children, together with REALIZATION of the nature and superior advantages of the more modern "community" type of celebration.

9. An ATTITUDE of caution toward approaching animals or pets—particularly dogs—to whom one is not known—and an corollary REALIZATION that "teasing" animals is not only unfair but dangerous (to counteract the possibility of bites, scratches, or other injuries).

10. Desirable OUTCOMES relating to "coasting"—sleds, bicycles, scooters, coaster-wagons, etc.—(to counteract the possibility of accident in this type of play):

(a) The HABIT of choosing hills, roads, or streets not frequented by traffic—automobiles, wagons, trolley-cars, busses, etc.

(b) The HABIT of refusing to coast on a hill where there is a "hidden" crossing, e. g., where the approach of a vehicle on the intersecting road cannot be observed.

(c) The HABIT of making sure that the terminal of the course is safe—no thin ice, ditches, rocks, tree-stumps, etc.

11. The ATTITUDE of refusing to have foreign objects or substances in the mouth, particularly when walking or running (to counter-act the possibility of choking, or of injury to the mouth).

12. A REALIZATION of the dangers attached to live wires and a consequent ATTITUDE of desiring to avoid them (to counteract the possibility of electric shock).

Completing Elements:

1. See Common Factor, Completing Elements, Complex F-I.

2. See also other desirable outcomes relating to play in Complexes F-I, II, III, IV, and V.

Limiting Elements:

1. See Common Factor, under Limiting Elements, Complex F-I.

Transferring Elements:

1. See Common Factors, under Transferring Elements, Complex F-I.

F-7. Desirable OUTCOMES relating to the prevention of accidents to the baby. (These outcomes have been incorporated in Complex F-I—
The prevention of accidents in the home.)

F-8. Desirable outcomes relating to the prevention of accidents in industry.

HEALTH EDUCATION COMPLEX F-VII
(Controlling System)

Controlling Outcome:

An ATTITUDE of "Safety-First" while at work.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. See Common Factors, Strengthening Elements, Complex F-I.

Counteracting Elements:

1. The REALIZATION that Safety-First campaigns in industrial establishments have resulted in marked decrease in accidents (to counteract possible lack of interest in Safety-First campaigns on the part of either employer or employee).

2. The HABIT of reporting to proper authority in the shop unsafe conditions or unsafe practices where such exist (to counteract carelessness on the part of employees or overseers).

3. An ATTITUDE of respect toward the sources of certain types of accident (to counteract any feeling of familiarity with danger, and consequent carelessness), particularly "standing under hoists, cranes, conveyors, tackle, buckets, ladles containing molten metal, weights, or material of any kind that is being raised, lowered, or carried."[137]

4. An ATTITUDE of co-operation between men and management for greater safety of the worker (to overcome apathy of men and management toward standards of safety).

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[137] Tolman: Hygiene for the Worker, p. 139.

5. REALIZATIONS, ATTITUDES and HABITS relating to the causes of accidents in industry (to overcome the possibility or probability of accident arising from the cause indicated):

(a) Unguarded wheels or gearing.
(b) Unprotected belting or shafting.
(c) Loose, flowing, or torn clothing.
(d) Worn or slippery floors.
(e) Carelessly piled materials or waste.
(f) Lack of railings, guards, etc.
(g) Poor ladders.
(h) Poor light.
(i) Insufficient ventilation.
(j) Unguarded presses and stamping machines.
(k) Inexperience of workers.
(l) Taking risks.
(m) Neglecting to use safety devices, (e. g., goggles, respirators, etc.).
(n) Overspeeding of production.
(o) Overcrowding of machinery.
(p) Oiling or cleaning of machine while motion (without proper equipment).
(q) Lack of safety hoods and collars over fly-wheels, grinding or polishing wheels.
(r) Lack of care in the operation and guarding of elevators and elevated shafts.
(s) Lack of guards around platforms to prevent tools and other objects falling on workers below.
(t) Disobedience of, or unfamiliarity with, rules and regulations for safety and for the use of machines and materials given into the worker's care.
(u) Use of defective tools or materials.
(v) Removal of safeguards already on machines.
(w) Sky-larking during working hours.
(x) Lack of acquaintance with fire-exits and methods of escape.

6. REALIZATIONS relating to the hazards peculiar to certain occupations, and consequent ATTITUDES of desiring to avoid them, or to mitigate, as far as possible, their ill-effects

(to counteract the harmful effects of certain hazardous occupations).

(a) harmful shop conditions
    (a) too crowded
    (b) overheated
    (c) hours too long
    (d) work too exhausting
    (e) poor ventilation.

(b) certain occupations wherein the worker either breathes in poisonous gases, dust, or fumes, or in which he is compelled to handle materials capable of producing poison or disease:
    (a) lead manufacturers
    (b) arsenic manufacturers
    (c) phosphorous manufacturers
    (d) mercury manufacturers
    (e) brass and bronze
    (f) dyes
    (g) ammonia
    (h) acids
    (i) naphtha
    (j) petroleum
    (k) coal gas
    (l) gas from automobile exhaust

(c) coal mines

(d) skin and hides industries.

7. The REALIZATION that these dangers and discomforts are largely preventable[138] to counteract the possible harm due to the indifference of a "fatalistic" philosophy).

8. An ATTITUDE on the part of employers of desiring to provide the conditions and devices most conducive to the employees health, together with a REALIZATION of the nature of these conditions and devices (to counteract possible apathetic or indifferent attitudes on part of employers toward the welfare of their employees).

9. An ATTITUDE on the part of the workers of desiring to

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[138] Tolman, Hygiene for the Worker, p. 165.

avail themselves of the benefit of the conditions and devices thus provided, and to observe the rules and regulations thus laid down for their welfare (to counteract attitudes of recklessness or indifference on the part of employees).

Completing Elements:

1. See Common Factor, Completing Elements, Complex F-I.

Limiting Elements:

1. See Common Factor, Limiting Elements, Complex F-I.

2. The REALIZATION that an excess of care or caution—frequently on the part of "beginners"—may result in an accident (e. g., nervousness or awkwardness interfering with a desired automatic muscular response.[139]

Transferring Elements:

1. See Common Factors, Transferring Elements, Complex F-I.

F-9. Desirable outcomes relating to the prevention of accidents when traveling.

HEALTH EDUCATION COMPLEX F-VIII
(Controlling System)

Controlling Outcome:

An ATTITUDE of Safety-First when traveling.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. See Common Factors, Strengthening Elements, Complex F-I.

2. The REALIZATION that traveling is generally more hazardous to personal safety than ordinary daily routine at home.

Counteracting Elements:

1. REALIZATIONS relating to the need of adapting one's clothing to the season of the year, the general climate, and the weather (to counteract possibility of catching cold, etc.).

2. The HABIT of avoiding drafts (to counteract the possibility of catching cold).

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[139] Tolman: Hygiene for the Worker, p. 142.

3. REALIZATIONS relating to the hygienic value of avoiding large crowds, particularly indoors (to counteract the possibility of contracting a contagious disease).

4. The HABIT of using care in the selection of one's food and drink and the HABIT of adapting one's food and drink to the needs of the particular situation or locality in which one may find himself (to counteract the possibility of digestive or other systemic disturbances).

5. An ATTITUDE of desiring to avoid over-heated interiors (to counteract the possibility of catching cold as a result of this condition).

6. The REALIZATION that one should not make too great, nor too sudden, a change in the regimen of life to which one is accustomed (to counteract the possibility of systemic disorders caused by too much work being thrown upon certain organs).

7. An ATTITUDE of self-control and moderation in the activities of one's holidays or vacations (to offset any attitude of recklessness caused by excessive exuberance, with resulting possibility of danger to life, health, or physical welfare).

8. OUTCOMES desirable as a means of counteracting the possibility of accident when in a moving vehicle (train, trolley, auto, etc.):

(a) The HABIT of waiting until the vehicle has stopped before attempting to enter or to dismount.

(b) An ATTITUDE of caution in moving about on a moving train or trolley-car.

(c) The HABIT of keeping all parts of the body well within the lines of the vehicle.

9. OUTCOMES desirable as a means of counteracting the possibility of accident when traveling on the water:

(a) REALIZATIONS relating to the danger of over-crowding boats or canoes.

(b) REALIZATIONS relating to the location and use of life-preservers.

(c) REALIZATIONS relating to the dangers of rocking the boat, changing one's position abruptly, disregard of the "boom" on a sailing vessel.

(d) REALIZATIONS relating to the dangers of gasoline engines on motor boats, and fire-hazards on other boats.

10. OUTCOMES deemed desirable as a means of counteracting the possibility of accident when hiking or camping:

(a) The HABIT of wearing proper clothing (see 1, preceding).

(b) The HABIT of using care in the selection and preparation of food and drink.

(c) The HABIT of putting out the camp-fire, so that it is absolutely dead.

(d) REALIZATIONS relating to hiking or camping in the forests.

(e) REALIZATIONS relating to hiking or camping in the mountains.

(f) The HABIT of protecting one's self adequately against mosquitoes, and other insects, vermin, etc.

11. Desirable OUTCOMES relating to life in hotels or boarding-houses:

(a) The HABIT of locating the nearest fire-escape, or the best Mode of exit, before retiring (as a means of counteracting the possibility of being "trapped" in an emergency).

(b) The HABIT of examining bed sheets and pillow cases for evidence of the presence of vermin before retiring (to counteract possibility of contact with vermin).

Completing Elements:

1. See Common Factor, Completing Elements, Complex F-I.

Limiting Elements:

1. See Common Factor, Limiting Elements, Complex F-I.

Transferring Elements:

1. See Common Factors, Transferring Elements, Complex F-I.

F-10. Desirable outcomes relating to the prevention of accidents by fire.

(This additional group of outcomes—not in the original outline or questionnaire—has been here included because

further study has seemed to indicate that a separate grouping would probably result in more effective treatment).

Health Education Complex F-IX
(Controlling System)

Controlling Outcome:

An ATTITUDE of Safety-First—not only toward fire prevention, but also toward the possibility of injury by fire, or in fire-situations.

Elements of the Complex

Strengthening Elements:

1. See Common Factors, Strengthening Elements, Complex F-I.

2. A REALIZATION of the tremendous economic loss caused by fire each year.

3. A REALIZATION of the injuries and fatalities caused by fires each year.

4. A REALIZATION of the significance of the fact that the European per capita loss by fire is yearly about one-fourth as great as that of the United States (more stringent laws and enforcement, individuality responsibility for damage to property of others, etc.).

Counteracting Elements:

1. A REALIZATION of the principal causes of fires with a consequent ATTITUDE of desiring to avoid these causes (to counteract the possibility of fires):[140]

(a) Carelessness in factories (dirt, oil waste).
(b) Careless use of matches.
(c) Bad electrical wiring.
(d) Careless housekeeping (in *any* building).
(e) Dark and dirty hall-ways (and the lighting of matches and the throwing of them away).
(f) Dark basements (as above).
(g) Oil stoves.
(h) Old-fashioned oil lamps.
(i) Cigar and cigarette stumps.

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[140] Ex-Chief Croker of New York City. See Tolman, p. 169.

2. REALIZATIONS relating to the failure of and need of fire protective appliances (sprinklers, etc.) and fire-proof construction (to help counteract the possibility of loss of life and property by fire) for:

(a) buildings—business, factory, etc.

(b) schools and churches

(c) theatres and places of amusement

(d) ships.

3. A REALIZATION of the need and value of:

(a) building laws and inspection

(b) fire regulations and inspection

(c) Underwriters approval and inspection

(to counteract possible attitudes of indifference or non-co-operation on the part of citizens).

4. A REALIZATION of the need, value, and method of operation of fire-extinguishers.

(a) homes

(b) school

(c) factories, etc.

5. A REALIZATION of the nature and value of fire-drills.

6. OUTCOMES desirable for the possible counteracting of the causes of fire in the home:

(a) The HABIT of keeping the premises cleaned up.

(b) The HABIT of keeping inflammable or highly combustible materials in safety receptacles.

(c) The HABIT of cleaning up regularly and arranging with an eye to safety, basements and cellars.

(d) The REALIZATION of the particular danger of using gasoline in a closed room.

(e) HABITS of safety related to decorations, particularly at Christmas-time:

  (a) avoiding highly inflammable decorations—cotton, tissue paper, celluloid, etc.

  (b) avoiding use of candles

  (c) having a bucket of water or fire-extinguisher near at hand.

(f) HABITS of safety in the kitchen regarding the handling and use of:
  (a) matches
  (b) oil stoves, and gas stoves.

(g) HABITS of safety on the part of smokers, particularly emphasizing:
  (a) the danger of smoking while lying in bed
  (b) disposal of matches and stubs of cigars and cigarettes.

(h) HABITS of safety relating to the use of matches, emphasizing particularly:
  (a) the danger of using cheap matches, the heads of which fly off and ignite.
  (b) the value of "Safety" matches (the type that must be struck on the box).
  (c) the value of metal safety containers for matches.
  (d) the value of having a safe place for the disposal of burnt matches.

(i) HABITS of Safety relating to the Fourth of July—see Complex F-VI—outcomes under 8.—Counteracting Elements.

7. The HABIT, when traveling, of examining the premises for location of fire-escapes before retiring (to counteract the possibility of being "trapped" in an emergency).

Completing Elements:

1. See Common Factor, Completing Elements, Complex F-I.

2. An ATTITUDE of self-possession and self-control in the presence of a threat by fire—with the REALIZATION that many fires can be extinguished during the first minute or two by the use of

1. bucket of water or sand
2. rug
3. fire-extinguisher.

3. The REALIZATION that one should shout "FIRE" on the discovery of fire—except in the case of a public assemblage of people—schools, churches, theatres, etc., where an undesirable panic might result.

4. REALIZATIONS relating to proper procedure when threatened by fire:

(a) that in a public assemblage one should move quietly and carefully toward the proper exit—or if possible, remain seated until the "rush" or stampede is over.

(b) that children should be calmed if they are to be controlled and rescued.

(c) that one should not "jump" too soon—wait until the last possible moment for either nets or ladders, before jumping.

(d) that one should not permit the condition or state of their attire to interfere with their rescue, but should aid rescuers or firemen in every possible way.

(e) that smoke can be largely overcome by using a damp cloth or towel over the mouth and nose, or by keeping as close as possible to the floor.

Limiting Elements:

See Common Factor, Limiting Elements, Complex F-I.

Transferring Elements:

See Common Factors, Transferring Elements, Complex F-I.

OBJECTIVE G

The Control of Emergencies in Health

This includes all Controlling Outcomes relating to:

	HEALTH EDUCATION COMPLEX:
1. Nose Bleed	G-I
2. Cuts	"
3. Bruises	"
4. Sprains, Strains, Dislocations	"
5. Broken Bones (Fractures)	"
6. Burns and Scalds	"
7. Fainting	"
8. Poisons (swallowed)	"
9. Electric Shock	"
10. Sun Stroke	"
11. Heat Exhaustion	"
12. Drowning	"

13. Asphyxiation . . . . . "
14. Bites . . . . . "
15. Hiccough . . . . . "
16. Strangling (and Hanging) . . . . . "
17. Choking (Objects Swallowed) . . . . . "
18. Wounds by Gunshot . . . . . "
19. Freezing (and Frost-bite) . . . . . "
20. Knocked-out Tooth . . . . . "
21. Major Epileptic Fits . . . . . "
22. Cramps (and chills) . . . . . "
23. Burning Clothing . . . . . "
24. Nausea . . . . . "
25. Blister . . . . . "

(Additional Controlling Outcomes)

26. Apoplexy (and Brain Injuries) . . . . . "
27. Carrying the Injured or Sick . . . . . "
28. Earache . . . . . "
29. Foreign Objects or Substances in the Eye "
30. Inflammation of the Eye . . . . . "
31. Ivy Poisoning . . . . . "
32. Sunburn . . . . . "
33. Toothache . . . . . "
34. Acid Burns . . . . . "
35. Colds . . . . . "
36. Alcoholic Poisoning . . . . . "
37. Prickly Heat . . . . . "
38. Hives . . . . . "

G-1-38. Desirable outcomes relating to the treatment of emergencies in health.

HEALTH EDUCATION COMPLEX G-I
(Controlling System)

NOTE: These "additional" Outcomes were not outlined originally in the questionnaire, and were likewise omitted in the returns from the questionnaire. Further study in the field of "First Aid" has convinced the investigator that reasonable grounds exist (on the basis of their "obvious recurrence and range") for the inclusion of the additional Outcomes: numbers 26 to 38 inclusive, as indicated above.

Controlling Outcome:

1. A REALIZATION of the nature of the various steps and procedures to be followed in the case of an emergency.

ELEMENTS OF THE COMPLEX

Strengthening Elements:

1. The MOTIVE of desiring to be of service to others.

2. The REALIZATION that prompt and effective first aid measures often mitigate decidedly the ultimate effects of an emergency.

Counteracting Elements:

1. The REALIZATION that "bungling" may have serious results to the subject (to counteract hasty or careless treatment or diagnosis).

2. The REALIZATION that water should ordinarily be given to preference to whiskey (to counteract the possible ill-effects of giving brandy or whiskey when it should not have been given).

Completing Elements:

1. The REALIZATION that one should have at hand at all times—but particularly when out of immediate touch with doctors, hospitals, etc.—a handy reference volume on First Aid Treatment or Emergency Treatments (the Boy Scout Manual or the American Red Cross Text Book on First Aid is suggested).

2. A REALIZATION of the value, and uses, of a good First Aid or Emergency kit.

3. A REALIZATION that proper safeguards are necessary in order to prevent the arising of Emergencies—see Complex G.

4. A REALIZATION of the need of sending for a physician as soon as possible in all cases except those that are obviously of passing or slight importance.

5. A REALIZATION of the importance of "keeping the crowd back."

6. A REALIZATION of the importance of making the patient as comfortable as possible: e. g.

(a) unconscious people should be given no water or fluid to drink.

(b) where a flushed face exists as a symptom, the head may be raised.

(c) permit the patient to lie on the back with the head low—unless there is reason to the contrary.

7. A REALIZATION of the need of loosening the clothing.

8. The REALIZATION that an injured person should be kept warm—otherwise loss of bodily heat will increase the degree of shock.

9. A REALIZATION of the proper procedure relating to specific emergency situations:

G-1—Nose Bleed:
Red Cross First Aid[140]—pp. 93–112
Boy Scouts Handbook[141]—p. 401
25 Yr. Book—Part I[142]—p. 50.

G-2—Cuts:
Red Cross—pp. 93–112
Boy Scouts—p. 390.

G-3—Bruises:
Red Cross—pp. 59–61, p. 161
Boy Scouts—p. 383
25th Year Book—p. 50

G-4—Sprains, Strains, Dislocations:
Red Cross—pp. 53-57, p. 161
Boy Scouts—pp. 383, 384
25th Year Book—pp. 51, 53.

G-5—Broken Bones (Fractures):
Red Cross—pp. 35–39, 42–44, 83, 84
Boy Scouts—pp. 385–387
25th Year Book—p. 51, 53.

G-6—Burns (and Scalds):
Red Cross—pp. 117, 143, 144, 130–133.
Boy Scouts—p. 399
25th Year Book—p. 52.

G-7—Fainting:
Red Cross—p. 5, 139.
Boy Scouts—p. 394
25th Year Book—p. 49.

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[140] American Red Cross, Abridged Text Book on First Aid, 1925.
[141] Handbook for Boys, Boy Scouts of American, 1926.
[142] 25th Year Book, Part I, National Society for the Study of Education, February 1926.

G-8—Poisons (Swallowed):
Red Cross—pp. 143–144, 146
Boy Scouts—p. 396
25th Year Book—p. 52
G-9—Electric Shock:
Red Cross—pp. 125–130, 133, 136
Boy Scouts—p. 383.
25th Year Book—p. 49
Joint Comm.[143]—p. 53.
G-10—Sun Stroke:
Red Cross—pp. 125–130, 133, 136
Boy Scouts—p. 395
G-11—Heat Exhaustion:
Red Cross—p. 120
Boy Scouts—p. 395.
G-12—Drowning:
Red Cross—pp. 162–173
Boy Scouts—p. 372
25th Year Book—p. 53.
G-13—Asphyxiation:
Red Cross—pp. 133–136
25th Year Book—p. 53.
G-14—Bites (and Stings):
Red Cross—pp. 88–91, 177
Boy Scouts—pp. 389, 401.
G-15—Hiccough:
Red Cross—p. 153
Boy Scouts—p. 402.
G-16—Strangling:
Red Cross—pp. 123–136.
G-17—Choking (Objects Swallowed):
Red Cross—pp. 123–136
25th Year Book—p. 50.
G-18—Wounds by Gunshot:
Red Cross—p. 174
Boy Scouts—p. 390.

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[143] Report of the Joint Committee on Health Problems in Education, 1924.

G-19—Freezing (and Frost-Bite):
Red Cross—pp. 120–121
Boy Scouts—pp. 395–396
25th Year Book—p. 51.

G-20—Knocked-out Tooth:
25th Year Book—p. 51.

G-21—Major Epileptic Fits:
Red Cross—p. 140, 154
Boy Scouts—p. 396
25th Year Book—p. 52.

G-22—Cramps (and Chills):
Red Cross—pp. 152–154, 181
Boy Scouts—p. 402.

G-23—Burning Clothing:
Red Cross—p. 115
Boy Scouts—p. 362.

G-24—Nausea:
Red Cross—p. 153.

G-25—Blister:
Red Cross—p. 180.

G-26—Apoplexy (and Brain Injuries):
Red Cross—p. 51, 141
Boy Scouts—p. 394.

G-27—Carrying the Sick or Injured:
Red Cross—pp. 186–204
Boy Scouts—p. 402.

G-28—Earache:
Red Cross—p. 156
Boy Scouts—p. 401.

G-29—Foreign Objects (Substances) in the Eye:
Red Cross—p. 88
Boy Scouts—p. 400
25th Year Book—p. 50.

G-30—Inflammation of the Eye:
Red Cross—pp. 85–87
Boy Scouts—p. 402
25th Year Book—p. 50.

G-31—Ivy Poisoning:
Red Cross—p. 178
Boy Scouts—p. 400.
G-32—Sun Burn:
Red Cross—p. 177
Boy Scouts—p. 400.
G-33—Toothache:
Red Cross—p. 155–156
Boy Scouts—p. 401.
G-34—Acid Burns:
Red Cross—p. 117.
C-35—Colds:
Red Cross—pp. 150–151.
G-36—Alcoholic Poisoning:
Red Cross—pp. 141–142.
G-37—Prickly Heat:
Red Cross—pp. 157–158.
G-38—Hives:
Red Cross—pp. 158.

Limiting Elements:

1. The REALIZATION that First Aid Treatment is not intended to be a substitute for the services of a physician and that one should not rely upon amateur diagnosis and treatment in an emergency—except
(a) for temporary relief, until expert or professional service is available.
(b) when no other service is available.

Transferring Elements:

1. An ATTITUDE of self-sacrifice for the good of others.

2. An ATTITUDE of responsibility and of assuming control of an emergencies when there are no others present who seem to know what to do, or an ATTITUDE of co-operation and efficient service in assisting anyone present who knows what to do, e. g., a physician.

OBJECTIVE H

The Control of the Emotions and the Ideals

This includes all desirable Controlling Outcomes relating to the control of the emotions and the ideals:

HEALTH EDUCATION COMPLEX

1. In The Home ..... H-I
2. In The City
3. In The State } ..... H-II
4. In The Nation
5. In The World ..... H-III

H-1. Desirable outcomes relating to the control of the emotions and the ideals in the home.

Health Education Complex H-I
(Controlling System)

Controlling Outcome:

An ATTITUDE of desiring to conduct one's affairs with proper regard for the welfare of the other members of the family.

Elements of the Complex

Strengthening Elements:

1. The MOTIVE of desiring to gain the approval and to avoid disapproval of the other members of the family.
2. A REALIZATION of the rights and privileges of the other members of the family.
3. A REALIZATION of the contributions made by other members of the family to the happiness of the particular individual.
4. A REALIZATION of the necessity of the individual's co-operation with the other members of the family.
5. A REALIZATION of the need of regulating affairs in the home.
7. A REALIZATION of the duty of the home in preparing the young for life in homes of their own.
8. An ATTITUDE of protection toward the weaker members of the family.

9. A REALIZATION of the biological facts pertaining to reproduction.

Counteracting Elements:

1. A REALIZATION of the duties of the various members of the family (to counteract misunderstandings as to authority, obligations, etc.).

2. A REALIZATION of the family, a distinctive social unit created by a human need (to counteract tendency toward breakdown in family relationships).

Completing Elements:

1. HABITS of truthfulness
2. HABITS of cleanliness
3. HABITS of orderliness
4. HABITS of courtesy
5. HABITS of helpfulness
6. HABITS of punctuality
7. HABITS of fair play
8. HABITS of honesty
9. HABITS of thoroughness
10. HABITS of respect for members of the family
11. HABITS of perseverence in family tasks
12. HABITS of loyalty
13. A REALIZATION of the effect on mental life of artistic and material surroundings
14. OUTCOMES relating to Mental Habits (D-9)
15. Desirable OUTCOMES relating to the general bodily health:

(a) The CONTROL of Personal Cleanliness (Objective A).
(b) The CONTROL of Environmental Cleanliness (Objective B).
(c) The CONTROL of Normal Functioning (Objective C).
(d) The CONTROL of Normal Growth and Energy (Objective D).
(e) The CONTROL of Disease (Objective E).
(f) The CONTROL of Accidents (Objective F).
(g) The CONTROL of Emergencies (Objective G).

Limiting Elements:

1. A REALIZATION of the happy medium between service and subserviency.

2. The REALIZATION that all are human and that one must not expect perfection from the other members of the group.

Transferring Elements:

1. An ATTITUDE of wholesome pride in one's family.
2. An ATTITUDE of being willing to make necessary personal sacrifice for the welfare of the group.
3. Ideals of service to others.
4. Standards of self-respect.

H-2, 3, 4. Desirable OUTCOMES relating to the control of the emotions and the ideals in the city, state, and nation.

Health Education Complex H-II
(Controlling System)

Controlling Outcome:

An ATTITUDE of desiring to fulfill one's personal responsibility in co-operative service toward the city, state, and nation; and of desiring the advantages of such conduct.

Elements of the Complex

Strengthening Elements:

1. A REALIZATION of the necessity for intelligent activity in co-operation with one's fellows.
2. A REALIZATION of the interdependence of the members of a community.
3. A REALIZATION that one is a member of the communities in which one lives and a REALIZATION of the responsibility of that membership.
4. A REALIZATION of the way a community works:

(a) Local industries
(b) Public service
(c) Form of government.

5. A REALIZATION of the advantages derived from membership in a community:

(a) Health
(b) Protection of life and property
(c) Education
(d) Recreation

(e) Civic Beauty
(f) Communication
(g) Transportation

6. A REALIZATION of the responsibility of the individual as the source of all governmental power.

7. A REALIZATION that all has been accomplished for the welfare of the whole has been the result of the collective efforts of individuals.

8. A REALIZATION that the character of the government and the nature of its acts are determined by the will of the people.

9. A REALIZATION that each member of the group shares the responsibility for all conditions which exist whether good or evil, over which he has any measure of control.

10. The REALIZATION of the necessity for intelligent, faithful service to the community through the exercise of the suffrage

11. MOTIVE: Many-sided interest in the welfare of the community.

12. An ATTITUDE of balanced judgment in promoting social ends.

Counteracting Elements:

1. The REALIZATION that a citizen must rely on the ballot, in no small degree, to formulate his will (to counteract indifference toward exercising the right of franchise).

2. A REALIZATION of the necessity on occasion of subordinating the individual to the welfare of the social whole (to counteract selfish acts in violation of law).

3. REALIZATIONS relating to practical knowledge of social conditions (to counteract ignorance, particularly in regard to the right of franchise).

Completing Elements:

1. The HABIT of conducting one's own affairs with proper regard for the welfare of the communities of which one is a member.

2. HABITS of rendering service to others.

3. IDEALS of personal honor.

4. Good Mental HABITS (see D-9).

5. Desirable OUTCOMES relating to general bodily health:
(a) The control of Personal Cleanliness (Obj. A).
(b) The control of Environmental Cleanliness (Obj. B).
(c) The control of Normal Functioning (Obj. C).
(d) The control of Normal Growth & Energy (Obj. D).
(e) The control of Disease (Obj. E).
(f) The control of Accidents (Obj. F).
(g) The control of Emergencies (Obj. G).

6. A REALIZATION of the intricate organization needed in a large community.

7. HABITS of cordial co-operation.

Limiting Elements:

1. The REALIZATION that man is greater than any institution.

2. A REALIZATION of the danger of subserviency.

3. The REALIZATION that "states break down when man becomes impersonal."

Transferring Elements:

1. An ATTITUDE of respect and admiration for a democracy.

2. An ATTITUDE of religious, racial, and social tolerance.

3. STANDARDS of loyalty to one's Ideals of civic righteousness.

H-5. Desirable outcomes relating to the control of the emotions "in the world" (i. e., in relation to world affairs).

Health Education Complex H-III

Controlling Outcome:

An ATTITUDE of sympathy and understanding toward other peoples and their problems.

Elements of the Complex

Strengthening Elements:

1. Sense of international interdependence:
(a) economic
(b) intellectual

2. A REALIZATION of the difficult character of diplomatic problems.

3. An ATTITUDE of appreciation toward the contributions of other peoples to our own happiness.
4. A desire (MOTIVE) for world peace.
5. An ATTITUDE of desiring to understand the point-of-view of other nations.

Counteracting Elements:

1. An Ideal of Health to be substituted for (counteracting) the Ideal of Wealth
(a) for individuals
(b) for nations
2. An ATTITUDE of forbearance and tolerance (to counter-act undesirable Attitudes of jingoism and narrow patriotism).
3. A REALIZATION of the shortcomings of diplomacy and "foreign-offices" (to counteract "jingoism").
4. REALIZATIONS of the methods used by exploiteers of the natural resources of the so-called "backward" nations or peoples (to counter-act jingoistic attitudes and motives, particularly as means of provoking wars).

Completing Elements:

1. A REALIZATION of the dependence of people on "geographic environment."
2. See Ideals of civic virtues—Complex H 1–2.
3. A REALIZATION that the individual in a democracy is responsible in international problems.
4. An ATTITUDE of being willing to make sacrifices for the sake of one's ideals.
5. A REALIZATION of the necessity at times of subordinating the interests of the country to the best interests of the world.

Limiting Elements:

1. The REALIZATION that much trouble between nations is caused by a narrow patriotism.
2. The REALIZATION that a government or a people in their desire for world peace should not permit themselves to be led into a position of being victimized by other nations or people.

3. The REALIZATION that a condition of world brotherhood is a *Standard* that must be attained by steps that are:
(a) well graduated
(b) easily attainable
(c) in proper sequence
and that nations may be expected to be governed by the best interests of the ultimate and *in the light of the present situation.*

Transferring Elements:

1. An ATTITUDE of tolerance toward others:
(a) racial
(b) social
(c) national
(d) religious
2. IDEALS of altruism.
3. IDEALS of service to others.
4. IDEALS of world peace.

SUMMARY

I. Possible Contribution of This Thesis to the Field of Education

(a) A formulation of the objectives of Health Education that has received endorsement from authoritative sources.

(b) A provisional assembling of desirable outcomes of Health Education *in terms of conduct control.*

(c) A selection of *outstanding outcomes as Controlling Outcomes* through which the Objectives of Health Education may reasonably be attained.

(d) The *organization* of other (minor or contributory) outcomes into Controlling systems or "complexes" designed to insure the effectiveness of each Controlling Outcome.

(e) A classification of these outcomes in a form designed to secure a *well-rounded* complex. The "Strengthening," the "Counteracting," the "Completing," the "Limiting," and the "Transferring and Interconnecting" elements represent certain general points of emphasis that tend to prevent the omission of important outcomes of obvious recurrence and range.

Particularly unique and valuable contributions in the form of contributory outcomes are to be found under those classed as "Counteracting" and "Limiting." They represent points of view which may be ignored in the ordinary course of study, or neglected in ordinary instruction.

(f) The questionnaire (Chapter II) was sent to a select group. The reactions of this group to the questionnaire were of sufficient importance, to justify their inclusion in full. Many of these comments (see Chapter III) represent trends of thought and can be valued as "expert opinion." (See Chapter III).

II. Limitations of This Thesis

(a) This provisional assembling of outcomes is not "inclusive" and final. Probably no procedure is known which would enable one to arrive at such finality of determination. Outcomes, and even objectives themselves, must be ever in a state of flux, subject to the discoveries of advancing science and the

changes in a civilization that is growing increasingly complex. An attempt has been made, however, to include only those outcomes for which some competent medical authority exists. References to these have been provided in many cases.

(b) The outcomes are selected on the basis of their "obvious recurrence and range" in the activities of life, as indicated by an examination of certain materials previously named, and in the light of certain reactions suggested in replies to the questionnaire. The final validity of this selection and the effectiveness of the classifications in the form of health education complexes are subject to confirmation by future investigation.

(c) Objective H—cannot be considered as having the same professional endorsement as the other objectives, A to G, inclusive. It was formulated in response to demands made in the replies to the questionnaire, and therefore not subject to the same criticism relating to form and content as the others received.

(d) Objectives B—The Control of Personal Cleanliness and H—Control of the Emotions and the Ideals involve a certain amount of the material of instruction of civics. No attempt was made to go into great detail in the civics aspects of these objectives, although general groups of desirable outcomes in the field were indicated.

III. Suggestions for Experimentation and Research

(a) Determination of "unique" values for location of the various outcomes in courses of study. Which outcomes should be assigned to the teacher of clothing, of foods, of physical training, of formal hygiene, etc.?*

(b) Determination of the "location" of the various outcomes in the various grades, or years of the course of study. The Tentative Course of Study, Grades I to VI, Horace Mann School (see bibliography) contains an account of a procedure by which certain outcomes were assigned to certain grades.

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*See (1) Payne, E. George, *Education in Health*, Lyons & Carnahan, 1921.
(2) Report of Joint Committee, p. 76 and 77.
(3) Bulletin: *Teaching Health in High School* (see bibliography).

(c) Determination of the "Relative Worth" of the various objectives and outcomes. Such factors as Recurrence, Range, and Sensational or Emotional Appeal, and the whole question of "usefulness" (See Appendix A, p. 260 and 261) would enter into such a determination.

(d) Studies relating to "constants" and "variables" for the needs of individuals (individual differences), and of groups (sexes, foreign parentage, locality, low or high mentality, economic and social strata). Studies for the purpose of determining "minimum essentials" and "optionals" are also desirable.

(e) Studies for the determination of the values of adding certain outcomes to this provisional assembling, or of the need of eliminating other outcomes.

(f) Testing of the hypothesis involved in this thesis: the effectiveness of health education complexes as organized herein.

(g) Determination of "key-outcomes" and "common factors" of the complexes. (See p. 256 of Appendix A).

APPENDIX A—GLOSSARY

Definitions[1]

Education—the *retention* of experience; modification of the individual "from what he is to what he ought to be."[2]

Conduct—mental reaction; the behavior of an individual or a group in a particular situation, or in situations in general.

Conduct Control—behavior that controls conduct.

Educational Analysis—an analysis and an organization of the contributory and controlling outcomes by which the objectives are to be obtained; includes formulation of the objectives.

Objectives—The logically organized ends, objective to the individual learner.

Outcomes—The particular control element or form of control through which conduct is controlled.

Controlling Outcome—The particular control element or elements through which any education objective finally exercises its control.

Key Outcome—An outcome by means of which many other outcomes may be attained, wholly or in part.

Common Factor—An outcome common to a number of complexes.

I. [3]*Impression Control:*

The *elements* of this form of control are those that deal with the feelings—as controls of conduct. They are:

(1) SENSINGS—accustomed sensations or feelings about or towards a thing, without a consciousness of the cause. Their "distinguishing method" for development may be classified according to

A. Already existing feelings.

B. Feelings which do not yet exist.

A. Under "already existing feelings" we must consider:

(a) the *counterbalancing* of already existing wrong instincts or sensings by often enough repeated right feelings;

(b) the *analysis* of a complex sensing into its components, and enough repetition of the feeling involved in each component;

(c) *discrimination* between increasingly less different sensations or feelings, with a view to more delicate sensings.

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[1] Based on Dr. Yocum's *Analysis of Education as Conduct Control.*

[2] Thorndike, E. L.—*Education, A First Book.*

[3] For this and following definitions, thanks are due to Dr. A. Duncan Yocum of the University of Pennsylvania. See his "*Analysis of Education as Conduct Control.*"

B. Under "feelings which do not yet exist" must be considered:

(a) *realizations*, which, being developed, certainly result in the feelings.

(b) *imagination*, in which feelings are imagined until they are really felt.

(c) *imitation*, in which the customary ways of *expressing* feelings are imitated until the feelings accompany their expression.

All sensings are made controlling only through the repetition of a feeling with, or without conscious reason for it, until it is controlling without any consciousness of reason. This is achieved through *cumulative instruction* or through *cumulative experience.*

(2) REALIZATIONS are feelings of familiarity for the most useful part or phase of anything, with are accompanied with the consciousness of having previously experienced it. The "distinguishing method" for the development of realizations involves:

(a) *immediate personal* experiences or situations. These may be:

a. ignored

b. appropriated and used

c. created

(b) *revived* personal situations or experiences:

a. revived by teacher

b. revived by pupil

(c) *assembled* situations or experiences.

Such *experiences*, result from a *combination* of past situations or experiences into a new combination.

(d) *vicarious* experience—arrived at through the experience of another.

(e) *selective realization*—by which process the experience and the resulting feeling of reality are centered upon the characteristics which will make the realization most useful; and, until the characteristic is made real, to eliminate, postpone or weaken all distracting realizations. See (a) above, and (f) below.

(f) *types* of realizations:

a. essential (for all, at all times, etc.)

b. contributory (for some, at certain times, etc.)

c. distracting—these which tend to negate the desired realization (either essential or contributory) at issue.

(3) ATTITUDES are controlling feelings about or toward something. The "distinguishing method" involves:

(a) *definite centering* on ideas of based the "range of usefulness" and "frequency of recurrence" in life.

(b) the *emotionalizing* of these ideas.

a. Sensings

b. realizations

(c) The development of a "*strong enough Motive*, or enough strong Motives" to make them emotionally controlling.
(d) the definite centering of already existing strong feelings upon them.
(4) MOTIVES are feelings strong enough to result in action. The "distinguishing method" for the development of motives includes:
(a) the selection of a strong enough *highest motive.*
(b) the selection of enough *variety* of proper motives.
(c) a *conscious effort* to keep the highest motive supreme.
(5) STANDARDS or IDEALS are feelings strong enough to result in the attainment of new achievement levels. The "distinguishing method" here involves:
(a) *objective* and *attainable* standards
(b) proper *sequence* and *gradation* of steps in the order of:
a. attain ability
b. dependence
(c) a controlling desire to attain
(d) habits of persistance
(e) reminders to try.

II. *Vocabulary Control:* This form of control relates to barely retained knowledge and experience. Vocabulary, through words as labels of past experiences, facilitates the recall of past knowledge or experience.[4] The elements of Vocabulary Control are:

(1) Conspicuous labels—words emphasized for the retention of important experiences.
(2) words easily retainable through their form
(3) memorized general terms and the assembling of words under them.
(4) memorized word suggestions and practice in their use.
(5) memorized locations suggestive of many words and the locating of words in them.

III. Variation (Association) Control is that form of Control which relates to many-sided or varying knowledge and experience from the standpoint of retention. The elements of Variation Control are:

(1) temporary experience suggestive of many ideas.
(2) ideas specifically suggestive of many ideas and experiences.
(3) memorized general ideas and the assembling of particulars under them.
(4) idea suggesters and practice in their use.
(5) memorized and permanent locations suggestive of many ideas.

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[4] See Rugg, (p. 18, Part I, 26th Year Book), ". . . experience expands hand in hand with vocabulary."

IV. Habit and System Control is that form of control relating to definite and certain knowledge and experience. Its control elements are:

(1) Habits essential to other forms of control (impression, vocabulary, etc.).

(2) Habits specifically useful in themselves only.

(3) Habits generally useful, applied as a matter of course.

(4) Habits generally useful, with obstacles in the way of their application.

For the purposes of this thesis, no attempt has been made to differentiate between the various types of habits, although it is suggested that most health habits would probably fall under the second category—"Habits specifically useful in themselves only," e.g., brushing the teeth, proper elimination, etc.

V. Transfer Control is that *form* of control relating to the transfer of knowledge or experience to new fields, usually in the face of difficulties. The elements of Transfer Control are:

(1) determination of the most generally useful form.

(2) association with the most useful and difficult types and fields of application.

(3) development of strong enough motive to insure the desire to transfer.

(4) development of the habit of looking for opportunities for transfer, or new applications.

(5) familiarity with the vocabulary and the knowledge essential to application in the associated fields and types.

Standards for the Selection of the Materials of Instruction:

I. Kinds of Educational Usefulness.

II. Factors of Educational Efficiency.

III. Scientific Determination.

I. Kinds of Educational Usefulness.* This refers to:

(1) specific or general.

(2) common or specialized.

(3) academic or social.

Specific educational usefulness refers to control elements, outcomes or controlling outcomes specifically useful in themselves.

General educational usefulness refers to common factors of usefulness recurrent through a number of outcomes representative of specific educational usefulness.

Common educational usefulness are those which are useful to all, although perhaps in varying degrees.

Specialized educational usefulness refers to those outcomes that are useful for those who are specializing in some phase of work, rather than to all (common).

Academic educational usefulness refers to that knowledge which is useful for its own sake.

Social educational usefulness refers to knowledge that has direct usefulness in one or more phases of social life.

II. Factors of Educational Efficiency:

(1) *Adaptation* and *Adjustment*. *Adaptation* refers to the meeting of individual differences by suitable variation in the environment (school). *Adjustment* refers to the need of the individual to adjust himself to certain minimum essentials.

(2) *Suggestive Definiteness*. This refers to the need of material to be definitely suggestive of control.

(3) *Selection*. The selection of material is to be governed by certain standards:

(a) *Unique Worth*. This refers to those methods and materials that may be without range or recurrence, but the value of which is obvious. Outcomes not having unique worth must be judged by

(b) *Relative Worth*. The *relative* worth of educational methods and materials is determined by:

a. *Recurrence*. This refers to the temporal aspect, the "number of times," the frequency, etc. Absolute recurrence may or may not possibly be determined statistically. In some cases such tabulation is possible. In other cases (e.g., "Realizations" or "attitudes") exact tabulation or computation of recurrence may be difficult, or even impossible. In some cases, exact tabulation may be unnecessary because of the "obvious objectivity," (as refers to recurrence) of certain outcomes based on life situations or needs. Science suggests the need of cleaning one's nails. A tabulation of the number of individuals having nails that should be cleaned is unnecessary. There is an "obvious recurrence" for this outcome.

b. *Range*. This refers in general to the number of types of usefulness, the number of variety of situations in which a given outcome may be useful. Here again, statistical methods again may be difficult or unnecessary. To return again to the cleaning of one's nails, need one make a statistical study of the number of types of situations where this outcome may be useful? That there are enough types to warrant the inclusion of this outcome is obvious. Science points out the need, and for outcomes in health, the range and the recurrence become immediately obvious as justification for the given outcome.

The assembling of outcomes in the complexes of this thesis, therefore, is based on their "obvious recurrence and range" as suggested by an examination of—pupils' texts, courses of study, and other sources of material previously indicated.

c. *Sensational and Emotional Appeal.* Psychology indicates that sensational and emotional *appeal* are factors in the retention of knowledge or experience.

(4) *Inclusiveness.* This factor indicates the need of including sufficient material to make the outcome, or the complex, actually controlling. It suggests the inclusion of every thing necessary to determine complete usefulness or efficiency in education. It implies limits, complements, and alternatives in such numbers and of such types as are needed for completeness. It is also the justification for the various elements of the complex—strengthening, counteracting, completing, limiting, transfering and interconnecting elements.

Inclusiveness must take cognizance of the following sources of materials and outcomes:

(a) Accepted Purpose.
(b) Social Demand and Need.
(c) Scientific Determination.

(a) Accepted Purpose represents the traditional point of view in education, with its conservation of good and ill. For the purposes of this thesis, the point of view of accepted purpose was represented by the inclusion of 34 pupils' texts and 17 courses of study as the basis for the inclusive assembling of outcomes.

(b) Social Demand and Need represents the point of view of a changing civilization. It constitutes the demands of society upon the schools. In many cases these demands involve changes from the traditional point of view. For the purposes of this thesis, "social demand and need" is represented by the booklets and leaflets of fifteen organizations of reputable standing in the United States.

(c) Scientific Determination. This is authoritative voice of advancing science. Two professions, both of which are utilizing methods of scientific research, are involved in the projection of this thesis. Medical science is represented by a small group of books written by men of standing in the medical profession—Burnham, Darlington, and Williams. These books represent neither "accepted purpose" nor "social demand and need" in relation to the schools. They have no relationship to the schools in the sense of the formulation of a program. They represent medical authority and opinion, and as far as is known, the determinations of science. Williams,

in his *Personal Hygiene Applied*, was particularly valuable as he is not only an exponent of "scientific medicine" rather than of medical opinion, but he treats his subject after the method of research, giving constant reference to sources and authorities.

From the standpoint of education, the complexes as organized hereafter are but tentative. We must await the outcome of scientific investigation and of control experiments for confirmation of the value of this work. It is in a sense, the first, but very necessary step in research. The provisional assembling and organization of outcomes into complexes, following certain principles, constitutes a reasonable hypothesis, subject to the results of future investigation.

In this connection, some doubt may be expressed as to legitimacy of any claim of this thesis, to be known as research. For authority, we quote from the pamphlet *Research Bulletin* (as formulated by the Committee—Cox, Masters, Pringle, Norton, Jones), under the heading "Types of Research"—(the philosophical type), page 17: ". . . it must be remembered that all postulates and concepts are mere hypotheses, valid only as they stand the test of actual practice. On this account it is sometimes entirely justifiable to accept as a basis for analysis some concept that is not generally accepted. If we took as our basis only such theories or postulates as are generally accepted, no progress would be possible. Progress comes from new ideas, new concepts, new postulates."

(5) *Adequacy and Economy.* This is closely related to, and overlaps the preceding factor, Inclusiveness.

Adequacy suggests the *inclusion* of enough material

Economy suggests that only enough (adequate) material, and no more be *included* in order to save both time and energy.

APPENDIX B—BIBLIOGRAPHY

I. Pupils' Texts.
II. Courses of Study.
    1. Health Education
    2. Civics
III. List of Organizations issuing Literature used in this Study.
IV. References—Health.
V. References—Civics.
VI. References—Health Education.
VII. References—Education.

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